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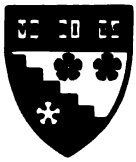

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INDEX TO VOLUME X.

Abrams, Ruby, 409.
Addison, W. H., Report on Visit to Some American Schools for the Deaf, 64; corrected regarding Washington Heights School, 302; refs. to, 110. 340, 497.
Aim of Education of the Deaf, review, 391.
Agreement between Alexander Graham Bell and the American Association relative to the Volta Bureau, 542.
American Annals of the Deaf: extract from, 460; ref. to, 63; review of, 108, 413; Statistics, 113.
American Association to Promote the Teaching of Speech to the Deaf: Annual Meeting of the Directors, 111, 540; Call for Annual Meeting of Association, 231; Annual Meeting, report by F. W. Booth, 338; New Members, 121, 342; Volta Bureau and the Association, 330, 540; Melville Bell Memorial Fund (trust deed and agreement), 443; Agreement with Alexander Graham Bell relative to the Volta Bureau, 542.
American Schools for the deaf: alphabetical list, 292; W. H. Addison on, 64; Bell Symbols in, 307; A. Hansen on, 48; S. Johnson on, 283; Sign-language in, by Olaf Hanson, 282; Statistics of Speech-teaching in, 290.
Andrews, Harriet U., Mechanism of Speech, by A. Graham Bell, a review, 91; ref. to, 338.
Aphasia: Hearing Mutes, by M. Dupont, in Revue Générale, 400; A Blind and Mute Child, by G. Disableu, in Revue Générale, 403.
Argo, W. K., 90, 221.
Arithmetic: Manual, by Eliza Kent, review, 411.
Arkansas Optic, extracts from, 194, 198.
Arnold, Thomas, 497.
Articulation: System of Walther, 507, 508.
Articulation teachers, First Convention, 17; Second, 17, 21.
Association Review: refs. to, 54, 63, 83, 111, 199, 202, 222, 229, 533.
Astigmatism, 385, 540.
At the Constitution House; or, The Unwelcome Guest, by a Teacher, 500.

Babcock, Maud May, 416, 417.
Barnes, Frank G., College of Teachers of the Deaf and Dumb, London, 494; refs. to, 64, 105, 497, 538.
Barrett, J. P., retirement, 442.
Barry, Katharine E., 221.
Barton, J. W., 104.
Baton Rouge, La., School, New Superintendent, 341, 439.
Bell, Alexander Graham. A Few Thoughts Concerning Eugenics, 166; Letter to Thomas F. Cummings, on Bell Symbols, 208; Letter to James L. Smith, on marriage of the deaf, 228; Reply to questions from Clarke School, on Bell Symbols, 312; Special Report upon the Deaf, based on the Twelfth Census, 36, 138, 240, 349, 455 (*See* Statistics); reads Bell Symbols in Chinese 303; member of Committee to confer with Mr. Carnegie, 328; regarding the Volta Bureau, 230, 330, 339; transfers property to American Association, 443; Agreement with the American Association relative to the Volta Bureau, 542; refs. to, 53, 58, 152, 182, 207, 338, 529, 530, 533. *See also* Real Romance of the Telephone.
Bell, Mrs. Alexander Graham, *see* Bell, Mabel G.
Bell, Alexander Melville: lectures on Visible Speech, 1; asked to teach it, 2; Memorial Department, 329; Memorial fund, 443; portrait, 202; System of Symbols, 7, 9, 11, 17, 60, 207, 530. *See also* Melville Bell Memorial Department.
Bell, Charles J., 339, 447, 543.

Bell, Mabel G., Communication (regarding Dr. Crouter), 81; reply by Messenger, 199; Visible Speech (letter to Scientific American), 207; What the Melville Bell Symbols mean to me, 308; refs. to, 132, 419; her marriage, 450.
Bell Symbols, as an Adjunct to Speech-Reading, by Mary H. True, 316; Bell Symbols in Chinese, by M. Gardiner, 303; letter from Mrs. Mills, 532; in Japanese, 534, 536; *vs.* Diacritical marks, William Gielow and Sarah Fuller, 317–318; What the Melville Bell Symbols mean to me, by Mabel G. Bell, 308; Capitals and Punctuation in, by M. Gardiner, 536; refs. to, 1-13, 15, 17, 20, 27, 32, 35, 60, 91, 93, 111. *See also* Melville Bell Memorial Department.
Bell Symbols, Stories and Poems in: Ant and the Grasshopper, 110; Atalanta's Race, 428; Behold, I Bring Tidings, 517; Bobolink, 525; Class of Austrian Deaf Children, 524; The Fly, 427; Fox Who Lost His Tail, 215; The Gannets, 523; How the Bee Got Her Sting, 430; How the Camel Got His Hump, 518; Lieutenant Thomas E. Selfridge, 425; Little Match Girl, 319; Lord's Prayer, 324; My Dog Ponto, 211; Psalm of Life, 526; Simple Simon, 323; Sing a Song of Sixpence, 210; To a Sea Gull, the Song of a Scottish Exile, by A. G. B., 425; translation of same, 531.
Bellville, Ontario, School, W. H. Addison on, 72; class in nursing, 201; ref. to, 65.
Berlin, Elsasser Str., School, normal course, 150.
Berlin Municipal Supplementary Classes, 105.
Beverly, Mass., School, bequest, 540.
Bingham, Cornelia D., Meeting of the Department of Special Education, N. E. A., 414; ref. to, 415.
Blätter für Taubstummenbildung, extracts from, 390, 398, 407; refs. to, 184, 389, 391.
Blind, Physiology of the, by M. Kunz, 465; maps for, 466; neglected after leaving school, 284; Statistics, 169; refs. to, 187, 188.
Blind-deaf, Education by Hand-touch Alphabet, 398-400; Sense of Smell, 328, 477.
Bonnier, Pierre, La Voix, sa Culture Physiologique, a review, 101.
Books, Periodicals and Reports Department: Bell, A. Graham, Mechanism of Speech, a review, 91; on sale, 118, 226; refs. to, 204, 205; Bell, A. Melville, English Visible Speech in Twelve Lessons, 204, 208; same in German and Italian, 421; Berlin Magistrat Verwaltungsbericht, 1906, 103; Bonnier, Pierre, La Voix, sa Culture, review, 101; Ferreri, G., Sunto Sommario degli Argomenti Svolti, 106; Gaw, Albert C., Legal Status of the Deaf, 105; Illustrated Vocabulary for the Use of the Deaf, 412; International Conference Proceedings, 1907, 104; Kent, Eliza, Manual of Arithmetic, 227, 411; Kutner, S., Picture Primer for Deaf Children, 411; Melville Bell Symbols, booklet, 318; National Association of the Deaf, Proceedings of Eighth Convention, 93; Ozun, Eugène, Quelques Considerations sur les Causes du Retard dans l'Apparition et dans le Développement du Language, 400; Radowski, L., Statistische Nachrichten über die Taubstummen-Anstalten Deutschlands, 107; Raindrop, The, 111, 217-19, 339, 340, 432; Smith, J. L., Book of Idioms, 334; Stern, L. W., Helen Keller, 94; Werner, Friedrich, Psychologische Begründung der deutschen Methode des Taubstummen-Unterrichts, 94; editorial, 112; ref. to, 183.
Booth, Frank W., Annual Meeting of the Board of Directors of the Association, 111; Psychological Basis of the Oral Method, 112; The Annals Statistics, 113; Discussion of Dr. Crouter's Paper at the Edinburgh International Conference, 116; Committee on International Statistics appointed by the Edinburgh Conference, 119; Supervising Principals, 119, 438; Work of the Teachers' Bureau, 120; Appointment of State Oculist recommended, 121; New Members, 121, 342; Visible Speech—the Electric Telegraphic Typewriter—Spelling Reform, 205; John Hitz, 216; Question of the Republication of "The Raindrop," 217, 340, 432; Volta Bureau Exhibit at Jamestown, 219; Northampton Summer School and Normal Training Class, both to be continued, 220; Proposed New York City Day-School to open in the Fall,

220; Convention of American Instructors of the Deaf at Ogden, 221; Deaf Children brought before the National Congress of Mothers, 221; "The Educational Press Association of America," 222; Professor Ferreri appointed to Rectorship of Milan School, 223; Discrimination against the Deaf in the Civil Service, 224; Miss Kent's Manual of Primary Arithmetic, 227; Volta Bureau, 230; Fear of the Written Word, 230; Melville Bell Memorial Department, 329; Volta Bureau and the American Association, 330; Convention of American Instructors at Ogden, 330; Foreign Visitors to Our American Schools, 331; Eighth Summer Meeting of the Association, 331; Speed Test of the Single and Double-Hand Alphabets, 332; Book of Idioms, 334; New York State Commissioners' Examination, 335; Annual Meeting of the American Association, 338; Boston Educational Association for Deaf Children, 341; Eighteenth Meeting of the Convention of American Instructors of the Deaf, 416; The Summer Schools, 431; Northampton Normal Class, 432; School for Semi-Deaf and Semi-Mute started in Glasgow, 432; Methods of Teaching the Deaf, a Symposium, 433; New Schools, 436; Deaf and the Civil Service, 437; a Foreign Visitor, 438; New Superintendent, 439; Retiring Teachers, 439; Blank Diagrams, 447; College of Teachers of the Deaf, London, 538; A Successful Photographer, 539; December Meeting of the Board, 540; A Correction, 540; Beverly, Mass., School receives Bequest, 540; Depositing Bound Volumes of Institution Papers in the Volta Bureau, 541; The Volta Bureau becomes the charge of the American Association, 541; Appointed Acting Superintendent of the Volta Bureau, 230; refs. to, 54, 63, 82, 111, 112, 119, 215, 284, 338.
Boston, Mass., Newberry St. School, 1, 58, 65, 73.
Boulder, Mont., School, 438.
Bowles, Bettie L., 120.
Boylan, M. C., 120.
Brighton, South Australia, School, 287.
British Deaf Times, ref. to, 201
Brock, Frances I., 410.
Brummit, Edith, 515.
Buenos Aires, School, 437.
Bulletin of the Aërial Experiment Association. 539.
Burton, Grace C., 333.

Canadian Mute, A School Museum, extract, 199.
Catholic Deaf-Mute, N. Y., extract, 409.
Cave Spring, Ga., School, 120, 408.
Chamberlain, Rev. Dr., 284.
Ch, Writing of, by E. F. W. D., 318, 528.
Chefoo School for the Deaf, by Annetta T. Mills, and the Committee, 82.
Chinese, Bell Symbols in, 17, 303, 532.
Chronicle (Ohio), extracts, 515.
Civil Service, Discrimination against the Deaf in the, editorial, 224, 437.
Clarke, Francis D., 340.
Clarke School, *see* Northampton, Mass., School.
Classification of deaf pupils, Hanover, 192.
Clerc, Laurent, 57.
Clifford, W. H., 439.
College of Teachers of the Deaf and Dumb, London, *see* London, College of Teachers.
Colombo, F., translation of "Old Problems not yet Solved," 398.
Colorado Index, extracts, 327, 328.
Colorado Springs, Col., School, 90, 163.
Columbus, Ohio, School, 438.
Combined System: Combined or Eclectic Method, E. H. Currier, 434; A Condition and not a Theory, from Lone Star, 325; Colorado Index on, 327; Sutermeister on, 374; Weak Spot in Combined System Schools, from Oregon Outlook, 408; What is the Combined Method? extracts, 194; refs. to, 49, 54, 56, 72, 175, 282.

Committee on International Statistics, 119.
Companion, Minn., extracts, 197, 198, 514.
Contemporary Thought: Helen Keller on "Sense and Sensibility," 186; Institutions for the Deaf in Russia, J. Moerder in Revue Belge, 190; Deaf Children in Hanover, classified according to Intelligence, 192; Concerning the Aim of the Education of the Deaf, 391; Old Problems not yet Solved, 395; A Hand-Touch Alphabet, 398; Hearing Mutes, M. Dupont in Revue Générale, 403; A Blind and Mute Child, G. Disableu, in Revue Générale, 403; You could still speak even if your Tongue were cut out, R. Kohler, in Revue Belge, 404; Abridged History of a Congenital Deaf-Mute who gained the Power of Hearing, J. Hogerheijde, in Revue Belge, 406; Photographing Speech, 406; Treatment of Stammering in Germany, 407.
Convention of American Instructors, Call for Eighteenth Meeting, 89; railway rates, etc., 221, 330; Programme, 288; report of meeting, by F. W. Booth, 416; refs. to Eighth Meeting, 17; Twelfth, 8; Thirteenth, 9; Fourteenth, 12.
Council Bluffs, Iowa, School, 515.
Courage, extracts, 195, 198.
Courier, Taubstummen, 375, 377.
Crouter, A. L. E., Call for Annual Meeting of Association, 231; Communication (regarding) by M. G. Bell, 81; reply, 199; Discussion of his Paper at Edinburgh, 116; re-elected President of the Board of Directors, 112; his tribute to Dr. Alexander Graham Bell, 9; refs. to, 54, 70, 111, 284, 338, 339, 445, 447.
Cummings, Thomas F., Letter regarding Bell Symbols, 208; reply by A. G. Bell, 208; second letter, 528; reply by M. Gardiner, 529.
Currier, Enoch Henry, Combined or Eclectic Method, 434; refs. to, 56, 284.

Davidson, Mrs. E. F. W., The Writing of *ch*, 318.
Danish Meeting of Teachers of the Deaf, Fifth, by Anders Hansen, 148.
Day-Schools, 53, 73, 436; in New York, 220, 409, 436.
De l'Epée, Abbé, 77, 99, 190, 272, 273.
Deaf American (Neb.), extract, 515.
Deaf and the Civil Service, 224, 437.
Deaf Carolinian (N. C.), ref., 541.
Deaf Hawkeye (Iowa), 515.
Deaf-Mute who gained the Power of Hearing, by J. Hogerheijde, in Revue Belge, 406.
Deaf-Mutes' Register (N. Y.), extract, 196.
De Land, Fred, Real Romance of the Telephone, 1, 123, 233, 343, 449.
Detroit Post, ref. to, 27.
Diacritical marks, Bell Symbols *vs.*, 317.
Disableu, G., A Blind and Mute Child, 403.
Dixon, H. N., 409.
Dobyns, A. Webster, 120.
Double-hand alphabet, speed test, 332.
Douglas, Miss J. S. F., 331.
Driggs, Frank M., arrangements for Convention at Ogden, 89, 90, 221, 330; ref. to, 201.
Dublin, Cabra, School, 286.
Dundee, Ill., School, 115.
Dunham, R. N., 439.
Dupont, Marius, Hearing Mutes, in Revue Générale, 400; refs. to, 403, 404.

Edgewood Park, Penn., School 111.
Editorial Comment, 111, 217, 329, 431; *see* Booth, Frank W.
Educazione dei Sordo-muti, review, 108, 413; extract, 395.
Elliott, Richard, and College of Teachers, 494–97, 499; on Dr. Crouter's Paper, 116; on Illustrated Vocabulary, 412; his retirement, 442; J. A. Weaver's tribute to, 442; ref. to, 193.
Ely, Charles W., 340.
Elyria, Ohio, School, 115.

Ephphetha, review, 108.
Ermoloff, J., Eyestrain and its Consequences, 385.
Eugenics, A Few Thoughts concerning, by A. G. Bell, 166; correspondence regarding, 227; committee on, 166, 227.
Examination, N. Y. State Commissioners, 335; of the Joint Examination Board, London, 512.
Eyestrain and its Consequences, by J. Ermoloff, 385; correction on, 540.

Fay, Edward Allen, 63, 69, 168.
Fay, G. O., 78.
Fear of the Written Word, by J. G. de Vries, 174.
Fechheimer, A. Lincoln, letter, 419; refs., 420, 421.
Ferreri, Giulio, American Institutions, republished in book form, 412; appointed rector, 223; discussion with Prof. Molfino, 395-98; list of works, 106.
Field, Alice M., retirement, 439.
Finland, Normal training in, 150.
Florida School Herald, extract, 328.
Forchhammer, G., hand-mouth alphabet, 60; refs. to, 154, 178, 185.
Forrester, T. C., 416, 438.
Fuller, Sarah, Reply to Wm. Gielow's "Bell Symbols *vs.* Diacritical Marks," 317; refs. to, 1-3, 13-14, 17, 21, 32, 58-59, 111, 129, 231, 338.
Fulton, Katharine, 115.

Gallaudet, Edward M., Call for Eighteenth Meeting of Convention of American Instructors, 89; on Visible Speech, 7; refs. to, 4, 49, 60, 69, 77, 284, 374, 417.
Gallaudet, Thomas Hopkins, 57, 60, 69, 77.
Gallaudet College, *see* Washington, D. C., College.
Gallaudet Day at Jackson, Miss., 515.
Gardiner, M., The Melville Bell Symbols, 202; Bell Symbols in Chinese, 303; Present Status of the Melville Bell Symbols in American Schools, 307; My Dog Ponto, ref. to, 307; Queries, 419, 528; Diagram Reading, 421; Reply to Thomas F. Cummings, 529; Proper symbolizing of R, 532; Mystery of the Sealed Book of the Volta Bureau Finally Solved, 532; Notes and Comments, 534. *See also* Melville Bell Memorial Department.
Garrett, Mary S., Helps and Hindrances of Deaf Children in acquiring speech at the Natural Age, 274; before Congress of Mothers, 221, 222; refs. to, 54, 55, 437.
Gaw, Albert C., Legal Status of the Deaf, review, 105.
Germany: Deaf Children in Hanover classified, 192; Language and Language Teaching in German Schools, by Hugo Hoffmann, 265; States where instruction of the deaf is obligatory, 192; Treatment of Stammering, 407.
Gielow, Wm., Bell symbols *vs.* diacritical marks, 317.
Gilby, Rev. F. W. G., 285.
Gillett, Philip G., 201.
Glasgow, Scotland, School, 64.
Goodwin, E. McK., 111, 231, 338.
Gould, George M., quoted on eyestrain, 385, 386; on astigmatism, 540.
Graser, Dr., 99, 180.
Great Extension of the Manual Method in Europe owing to Emperor Joseph II, by Joseph Schara, 272.
Griesbach, Prof., observations on the blind, 469-72, 477, 481, 482, 490, 492, 493.
Griffin, Elijah: a Forgotten Worthy, by H. Van Allen, in Deaf Mutes' Register, 196.
Groningen, Holland, School, 151.
Gruver, Elbert A., The Oral Method, 435; refs. to, 57, 111, 112, 231, 338.
Gutzmann, Hermann, treatment of stammering, 407; ref. to book, 181.

Haesler, Albert S., and Conrad Frederic, 539.

Hailmann, W. N., Psychological Basis of the German Method, review of F. Werner's book, 94; Concerning the Aim of the Education of the Deaf, 391.
Hammond, H. C., quoted, 197.
Hand-Touch Alphabet, translated from G. Pipetz, 398.
Hanover, classification of deaf pupils, 192.
Hansen, Anders, Fifth Danish Meeting of Teachers of the Deaf, 148; Paper on Training of Teachers, 149; Series of Tests in Lip-reading, 381; Visit to American Schools, 48; refs. to, 119, 398, 408.
Hansen, Olof, Sign-language in American Schools, 282.
Hard-of-hearing children, Instruction for, 390.
Hartford, Conn., School, 6, 7, 12, 13, 48, 56, 57, 65, 76, 77, 78; gardens at, 410.
Haycock, George Sibley, 200.
Haynes, Carrie and Mabel, retirement, 439.
Hearing Mutes, by M. Dupont, in Revue Générale, 400.
Heinicke, Samuel, 99, 273.
Helps and Hindrances of Deaf Children in acquiring Speech at the Natural Age, by Mary S. Garrett, 274.
Hill, A. C., 433, 434.
Hill, Moritz, 99, 388, 507, 510.
Hitz, John: Obituary, 216; Portrait, 216; In Memoriam: Address by Rev. Frank Sewall, 256; Address by Dr. Leo Vogel, 257 (Translation by Helen Keller, 259); John Hitz as I knew him, by Helen Keller, 260; Resolutions of Association, 340; refs., 63, 284, 303, 339, 412.
Hoffmann, Hugo, Language and Language Teaching in German Schools, 265.
Hogerheijde, J., Abridged History of a Congenital Deaf-Mute who gained the Power of Hearing, in Revue Belge, 406.
Home for the Training in Speech of Deaf Children before they are of School Age, *see* Philadelphia, Belmont and Monument Ave., School.
Horace Mann School, *see* Boston, Mass., Newbury St. School.
Howard, James, 495.
Hubbard, Gardiner Greene, 1, 6, 15, 25, 58, 126-129, 131-133, 136, 235, 237-238.
Hurd, Edwin G., 338.

Idioms, Book of, by J. L. Smith, editorial, 334.
Illingworth, E. A., 105, 118.
Illinois Advance, extracts, 201, 439.
Illustrations: Portraits, A. Melville Bell, 202; John Hitz, 216; Anna Morse, 440; *see also* Stories in Bell Symbols.
Institution Press, Department, 193, 325, 408, 512.
Iron Mountain, Mich., School, established, 115.
Isawa, S., 536.

Jackson, Miss., School, 120, 121, 515.
Jacksonville, Ill., School, 438.
Japanese in Bell Symbols, 421, 534, 536.
Jenkins, Weston, on Dr. Crouter, 81.
Johnson, Richard O., 338.
Johnson, Samuel, Report on Visits to Institutions for the Deaf and Dumb and the Blind in America and the British Isles, 283.
Jones, B. P., 119, 498.
Jones, F. Ince, 409.
Jones, John W., Programme of the Eighteenth Meeting of the Convention of American Instructors, 288; ref. to, 90.
Jones, Mary Davis, Some Suggestions about Lip-reading, 160.
Joseph II, Emperor, Letter to Abbé de l'Épée, 272; founds school in Vienna, 272.

Keller, Helen, John Hitz as I knew him, 260; Translation of Dr. Vogel's Address, 259; On Sense and Sensibility, 186; refs. to, 59, 94, 216, 399, 469, 514.

Kendall School, *see* Washington, D. C., College and School.
Kennedy, Mildred, Mirror Practice as an Aid to Lip-reading, 155.
Kensington, Md., School, 437.
Kent, Eliza, Manual of Arithmetic, publication delayed, 227; review of, 411; her resignation, 439; estimate of her work, 441.
Kentucky Standard, extracts from, 201, 328.
King, Dexter, 2.
Kohler, R., You could still Speak even if Your Tongue were cut out, in Revue Belge, 404.
Kunz, M., Physiology of the Blind, 465.
Kutner, S., Picture Primer for Deaf Children, review, 411; ref. to, 498.

"Laddie," by Anna C. Reinhardt, 277.
Ladreit de Lacharrière, Dr., 403.
Lake Linden, Mich., School, 437.
Landrain, I., A Few Words upon the Pedagogic System of Walther, 505.
Language-teaching: Book of Idioms, by J. L. Smith, editorial, 334; How far to Correct the Pupil's Language, 410; Language and Language Teaching in German Schools, by Hugo Hoffman, 265; Use the English Language all the Time, extracts, 196; Walther's System, 506, 509, 511.
Larsen, N. K., visit to U. S., 331; quoted, 382.
Lee, William, 332.
Legal Status of the Deaf, by A. C. Gaw, a review, 105.
Leipzig, Germany, School, 273.
L'Epée, Abbé de, 77, 99, 190, 272; Joseph II's letter to, 272; Count Migazzi's letter to, 273.
Lip-reading, Series of Tests in, by A. Hansen, 381.
Little Rock, Ark., School, 120.
Loar, Mary A., 115.
Logan, James H., Correspondence regarding "The Raindrop," 217.
London, Anerley, School, 285.
London, College of Teachers: College of Teachers of the Deaf and Dumb, by Frank G. Barnes, 494; Examination questions, 512; editorial on, 538.
London, Ealing, Training College, 494, 498.
London, Fitzroy Square, School and Training College, 407, 494, 498.
London, Homerton, School, 64.
London, Jews' Deaf and Dumb Home, 285.
Lone Star (Texas), extracts from, 200, 325, 326, 327.
Love, James Kerr, 432.
Lyon, Edmund, 60, 111, 328, 338, 339.

McCowen, Mary, 111, 338, 339, 414.
McDaniel, Nettie, 120.
McKendrick, J. G., La Voix, Sa Culture Physiologique, by Pierre Bonnier, review, 101.
McKinley, Frances, 120.
McPike, E. F., How Science Might Force a Spelling Reform, in Scientific American, 206.
Macy, John Albert, Gift of Speech, in Youth's Companion, review in North Dakota Banner, 514.
Maddison, Noel G., 409.
Madison, Wis., Day-School, 436.
Madrazo, Madame de, 437.
Manila, P. I., School, 515.
Manilla, Sweden, School, normal department, 149.
Manual Method, by Z. F. Westervelt, 434; refs. to, 49, 175, 177, 272.
Margate, England, School, flagstaff, 193; retirement of Dr. Elliott and Mr. Barrett, 442.
Marquette, Mich., School, 115.
Marriage of the Deaf, correspondence regarding, 227; statistics, 349-352.
Mary Cecelia, Sister, 436.

Maryland Bulletin, extract from, 515.
Mechanism of Speech, bv A. Graham Bell, review of, 91; ref. to, 102.
Melville Bell Memorial Department, 303, 419, 516; editorial on, 329; Memorial Fund, 338, 443; ref. to, 533.
Messenger, Alabama, extracts, 81, 199.
Methods of Teaching the Deaf, a Symposium, 433.
Michigan Mirror, extracts from, 196, 326, 198.
Migazzi, Count, letter to Abbé de l'Épée, 273; ref. to, 272.
Milan, Italy, Via S. Vincenzo School, normal course, 153, 223.
Milligan, Laurence E., 416.
Mills, Annetta T., Chefoo School for the Deaf, 82; Letter on Bell Symbols in Chinese, 532; refs. to, 85, 87, 534-536.
Mirror Practice as an Aid to Lip-reading, by Mildred Kennedy, 155.
Missouri Record, extracts from, 515.
Moerder, J., Institutions for the Deaf in Russia, 190; obituary, 229.
Molfino, Prof., Old Problems not yet Solved, 395.
Monro, Sarah Jordan, Summer School, 431; on books on voice culture, 530.
Morgantown, N. C., School, 120.
Morse, Anna, retirement, 438, 439; sketch of, 440; portrait, 440.
Mt. Airy World, extracts from, 193, 198, 442.
Mouth-hand alphabet, 60, 381, 383, 384.
Munich, Germany, Goethe Str., School, normal course, 151.

Nebraska Mute Journal, extract from, 197.
Negroes, Deaf, School for, Va., 326.
New York, Lexington Ave., School, 57, 65, 68, 111, 283.
New York, Mt. Morris Park, W., School, 55, 57, 65, 68.
New York, Twenty-Third St., School, 220, 409, 436.
New York, Washington Heights, School, 48, 53, 55, 56, 57, 64, 67, 283, 286, 515.
New York Evening Post, extract from, 452; Herald, extract from, 409; Journal, quoted, 515.
New York State Commissioners' Examination, 335.
Newspapers and Magazines reviewed, quoted or referred to: American Annals of the Deaf, review, 108, 413; extract, 460; refs. to, 63; Statistics, 113; Arkansas Optic, extracts, 194, 198; Association Review, 54, 63, 83, 111, 199, 202, 229; Blätter für Taubstummenbildung, extracts, 390, 398, 407; refs. to, 184, 389; British Deaf Times, ref. to, 201; Bulletin of the Aërial Experiment Association, extract, 539; Canadian Mute, extract, 200; Catholic Deaf-Mute, extract, 409; Century, extract, 186; Colorado Index, extracts, 327, 328; Companion (Minn.), extracts, 197, 198, 514; Courage (N. Y.), extracts, 195, 198, 199; Deaf American (Neb.), extract, 515; Deaf Carolinian, ref. to, 541; Deaf Hawkeye (Iowa), extract, 515; Deaf-Mutes' Register (N. Y.), extract, 196; Detroit Post, quoted, 27; L'Educazione dei Sordo-Muti, extract, 395; reviews, 108, 413; Ephphetha (Buenos Aires), review, 108; Florida School Herald, extract, 328; Gleanings in Bee Culture, extract, 278; Illinois Advance, extracts, 201, 439; Kentucky Standard, extracts, 201, 328; Lone Star (Texas), extracts, 200, 325, 326-327; Maryland Bulletin, extract, 515; Matilda Ziegler Magazine for the Blind, quoted, 187; Messenger (Ala.), extract, 81, 199; Michigan Mirror, extracts, 196, 198, 326; Missouri Record, extract, 515; Mt. Airy World, extracts, 193, 198, 442; Nebraska Mute Journal, extract, 197; New York Evening Post, extract, 452; Herald, extract, 409; Journal, ref. to, 515; Nordisk Tidskrift, for Döfstumskolan, refs. to, 48, 382; reviews, 109, 413; North Dakota Banner, extracts, 201, 514; Oregon Outlook, extracts, 194, 195, 408; Organ der Taubstummen Austalten in Deutschland, extracts, 380; review, 176; refs. to, 365, 389; Palmetto Leaf, extracts, 201, 409; ref. to, 197; Revista do Instituto Nacional de Sordes-Mudos, review, 109; Revue Belge des Sourds-Muets, extracts, 191, 192, 404, 406, 407; review, 107; Revue Générale de l'Enseignment des Sourds-Muets, extract, 403; review, 108; Rocky Mountain Leader (Mont.), extracts, 200, 410; School Helper (Ga.), extracts, 201, 408, 409;

Scientific American, extracts, 206, 207; Silent Worker (N. J.), extract, 201; Taubstummen Courier (Wien), refs. to, 375, 377; Teacher of the Deaf, extract, 409; review, 109, 413; Utah Eagle, extract, 201; Visible Speech Pioneer, refs. to, 13, 14, 202; Western Pennsylvanian, extract, 515; Wisconsin Times, extract, 196; Youth's Companion, ref. to, 514.
Nordisk Tidskrift för Döfstumskolan, refs. to, 48, 382; review, 109, 413.
Normal training: Paper by Anders Hansen, 149; at Northampton, 58, 76, 111, 152; at Washington, D. C., 62, 152; in England, 152; College of Teachers, 494, 538; *see also* Summer Schools.
North Dakota Banner, extracts from, 201, 514.
Northampton, Mass., School: W. H. Addison on, 73; A. Hansen on, 57, 58; Normal Department, 58, 76, 111, 152, 220; normal class, 432; Oral work at, 56, 57, 58; Summer School, 111, 220, 432; Visible Speech at, 5, 10; refs. to, 65, 66. *See also* Yale, Caroline A.
Noyes, Jonathan L., 440.
Nyborg, Denmark, School, ref. to, 48; tests in lip-reading in, 381.

Obituaries: John Hitz, 216; J. Moerder, 229; N. F. Whipple, 229; Eduard Walther, by A. Hansen, 388.
Ogden, Utah, School, invites Convention, 89, 90; arrangements for Convention, 417; supervising principal appointed, 120.
"Old Problems not yet Solved," trannlation, by F. Colombo, 395.
Oral Method, by E. A. Gruver, 435; in American Schools, 49, 54, 56, 57, 58, 70, 286; in English Schools, 285; at Leipzig (1778), 273.
Oregon Outlook, extracts, 194, 195, 408.
Organ der Taubstummen-Austalten in Deutschland, extract from, 380; refs. to, 365, 389; review, 176.

Palmetto Leaf, S. C., extracts from, 201, 409; ref. to, 197.
Paris, Rue St. Jacques, School, normal training, 153.
Philadelphia, Pa., Belmont and Monument Aves., School, A. Hansen on, 54, 55; W. H. Addison on, 71; refs. to, 65, 275.
Philadelphia, Mt. Airy, School: W. H. Addison on, 70; Dr. Crouter and, 81, 199; A. Hansen on, 49, 53-55; S. Johnson on, 284, 286; only oral-manual-alphabet school, 282; refs. to, 48, 65, 66, 283, 539.
Phillips, Hiram, retirement, 439.
Phonetic alphabet: How Science might force a Spelling-Reform, E. F. McPike, in Scientific American, 206; and reply by M. G. Bell, 207.
Photographing Speech, extract from Revue Belge, 406.
Pittsburg, Lowry St., School, 436.
Present Status of the Melville Bell Symbols in American Schools, by M. Gardiner, 307.
Primer for Deaf Children, by S. Kutner, a review, 411.
Problems not yet Solved, Prof. Molfino, in Educazione dei Sordo-Muti, 395.
Psychological Basis of the German Method, by Friedrich Werner, a review, 94; editorial on, 112; ref. to, 183.
Pure-Oral Method: Is the Sign Language a Necessity? by Eugene Sutermeister, 365; "Old Problems not yet Solved," Profs. Molfino and Ferreri, 395; refs. to, 285, 286.
Puzzles, Diagram, 422, 536; answers, 528.

Queries. *See* Melville Bell Memorial Department.

Radomski, J., Statistische Nachrichten, a review, 107.
Raindrop, The, 111, 217, 339, 340, 432.
Real Romance of the Telephone; or, Why Deaf Children in America need no longer be Dumb, by Fred De Land: Teaching Visible Speech, 1; "No Single Influence has done so much," 10; Visualizing Vibrations of Speech, 21; In the Days of his Youth, 27; Evolving the Theory of Speech Transmission, 31; Explains his Telephone Theory to Professor Henry, 123; Transforming the Telephone Theory into Tangibility, 131; Preparing the Patent Specifications, 233; The Fundamental Telephone Patent is granted, 343; Scientists show their Appreciation, 449.

Redden, Laura C., 531.
Regan, Margaret A., 220, 436.
Reinhardt, Anna C., "Laddie," 277, ref. to, 437.
Report on Visits to Institutions for the Deaf and Dumb and Blind in America and the British Isles, by Samuel Johnson, 283.
Retiring teachers, 439, 442.
Revista do Instituto Nacional de Sordos-Mudos, review, 109.
Revue Belge des Sourds-Muets, extracts, 191, 192, 404, 406, 407; review, 107.
Revue Générale de l'Enseignement des Sourds-Muets, extract, 403; review, 108.
Rice, Delia Delight, 515.
Rice Lake, Wis., School, 115.
Ritter, Wm. C., 93, 326.
Robinson, Warren, on finger spelling, 196.
Rochester, N. Y., School: W. H. Addison on, 65, 72; A. Hansen on, 59, 60; ref. to, 302.
Rocky Mountain Leader (Mont.), extracts, 200, 410.
Rogers, Harriet B., on Visible Speech, 8; refs. to, 1, 13, 17, 338.
Root, Ettie B., 115.
Russia, Institutions for the Deaf in, J. Moerder, in Revue Belge, 190.

St. Olaf College, Department for deaf, 515.
St. Petersburg, Schools, 190, 191.
Sanders, George (G. S. in text), 32, 129.
Sarah Fuller Home. *See* West Medford, Mass., School.
Sault Ste. Marie, Mich., School, 115.
Schara, Josef, Great Extension of the Manual Method in Europe in the last century, due to Emperor Joseph II, 272; his visit to U. S., 438.
Schöntheil, Simon, 495, 497.
School Helper (Ga.), extracts, 201, 408, 409.
Schools, New, 115, 436.
Scientific American, extracts, 206, 207.
Seattle, Wash., School, 115.
Selfridge, Lieutenant Thomas E., 425, 539.
Semi-Deaf and Semi-Mute, School for, in Glasgow, editorial, 432.
Sewall, Frank, Address on John Hitz, 256; ref. to, 216.
Showalter, J. B., 222.
Should the Deaf be "Social"? extract from Courage, 195.
Sicard, Abbé, 77, 190.
Sigmund, Abbé, 190.
Sign-Language in American Schools, by Olof Hanson, 282; Georgia School doing away with, in School Helper, 408; Is it a necessity? by E. Sutermeister, 365; J. L. Smith on, 198; Walther on, 505.
Silent Worker (N. J.), extract, 201.
Single-Hand Alphabet, Speed test of, editorial, 332.
Sioux Falls, S. D., School, 120.
Sleight, A., 498.
Sleight, William, 498, 495, 496.
Smith, Ina M., 115.
Smith, James L., Book of Idioms, review, 334; correspondence on marriage of the deaf, 227; on sign-language in school-room, 198; ref. to, 515.
Smith, Jennie, 415.
Some Suggestions about Lip-Reading, by Mary D. Jones, 160.
Special Education Department, N. E. A., Program, 333; report of meeting, by Cornelia D. Bingham, 414.
Special Report upon the Deaf, based on the Twelfth Census, by Alexander Graham Bell, 36, 138, 240, 349, 455. *See also* Statistics.
Speech diagrams, 422, 516; blank, 423, 424; ref. to, 447.
Speech and Speech-teaching: Helps and Hindrances of Deaf Children in Acquiring Speech, by Mary S. Garrett, 274; in American Schools, statistics, 290; tables, 298, 299, 300.

Speech-reading: Bell Symbols as an Adjunct to, by Mary H. True, 316; Mirror Practice as an Aid to Lip-reading, Mildred Kennedy, 155; Series of Tests in Lip-Reading, by A. Hansen, 381; Some Suggestions about Lip-Reading, Mary D. Jones, 160.
Speed Test of the Single and Double-hand Alphabets, by F. W. Booth, 332.
Spelling reform, How Science might force a, E. F. McPike, in Scientific American, 206.
Stainer, John, 496.
Stainer, Rev. William, and London College of Teachers, 494, 495, 496, 497, 499.
Stammering, Treatment of, in Germany, 407.
Statistics: The Deaf, by period of life when deafness occurred and causes of deafness, 42, 44; Per cent distribution of the deaf, by degree of deafness, period of life when deafness occurred, and principal causes, 47; Schools for the deaf in the U. S., 114; Instructors of the deaf in the U. S., 115; Work of the Teachers' Bureau, 120; Causes of deafness, 138-39; The deaf by degree of deafness, deaf relatives, and consanguinity of parents, 139; The deaf, by sex, race, nativity and causes of deafness, 141; Per cent of deaf from each cause, by period of life when deafness occurred, degree of deafness, sex, race, etc., 142; Deaf by age when deafness occurred, degree of deafness, deaf relatives and consanguinity of parents, 145; Deaf by consanguinity of parents, 147, 169; Deaf by deaf relatives, period of life when deafness occurred, degree of deafness, sex, consanguinity of parents, and sex of married deaf, 244; Deaf by deaf relatives, and age when deafness occurred, 245; Per cent of deaf having deaf relatives, classified by period of life when deafness occurred, degree of deafness, sex, consanguinity of parents, and sex of married deaf, 248; Per cent of deaf having deaf relatives, classified by age when deafness occurred, 250; Deaf having deaf children, classified by period of life when deafness occurred, degree of deafness, sex, consanguinity of parents, and deaf relatives, 253; Deaf having deaf husbands or wives, classified by period when deafness occurred, degree of deafness, etc, 254; The Sign-Language in American Schools, 282; The Progress of Speech-Teaching in American Schools, 290, 291; Speech-Teaching in American Schools, March 10, 1908, 297, 298; General Summary of same, 299; Means of Instruction in School and outside, 300; School-room usage, 300; Deaf classified by marital condition, etc., 361; Deaf classified by school attendance, degree of deafness, etc., 362; Per cent having deaf children for each class of deaf, 356; Deaf classified by period of life when deafness occurred, degree of deafness, ability to speak, sex, etc., 357; Deaf by age when deafness occurred and present age, 358; total population at specified ages compared with deaf from early childhood, 359; Per cent of deaf attending school, classified by age when deafness occurred, degree of deafness, etc., 363; Occupations, 455; Number and per cent of deaf in each group of occupations, 456; Same by degree of deafness, 456; Number and per cent of deaf gainfully employed, classified by schooling, 457; Number and per cent of deaf gainfully employed, by class of occupations, in relation to schooling, 457; Number and per cent of deaf 10 years of age and over, gainfully employed, classified by age, etc., 458; same, classified by ability to speak and degree of deafness, 461; Deaf, 10 years of age and over, engaged in each occupation, by age when deafness occurred, table LXXII, following p. 464; Deaf engaged in each occupation, by degree of deafness, ability to speak, sex, race and present age, table LXXIII, following p. 464; Deaf engaged in each occupation, by school attendance and kind of school attended, table LXXIV, following p. 464.
Staunton, Va., School, 120.
Stewart, A. A., 439.
Stewart, R. E., retirement, 439.
Stoke-on-Trent, England, School, 285.
Stork, Abbé, 272.
Story, Arthur J., 117, 413, 498.
Sullivan, Lottie, 328.
Sulphur, Oklahoma, School, 439, 515.
Summer Schools, 111, 431, 541.

Summers, Sarah L. D., 307.
Supervising Principals, editorial, 119; new appointments, 438.
Sutermeister, Eugene, Is the Sign Language a Necessity, called forth by Nature and Circumstances? 365.

Taft, Grace E., retirement, 439.
Taubstummen Courier, refs. to, 375. 377.
Taylor, Harris, 431, 532.
Teacher, A, "At the Constitution House; or, The Unwelcome Guest," 500.
Teacher of the Deaf, extract from, 409; review of, 109, 413.
Teachers' Bureau, Work of, editorial, 120.
Templeton, Maria P., 115.
Tenney, C. D., 303, 304, 533.
Thew, Jessie L., 115.
Throckmorton, Helen G., 120.
Tillinghast, Edward S., 416.
To a Sea Gull (poem in Bell Symbols), by A. G. B., 425; translation, 531.
Trondsen, Anna M., 115.
True, Mary H., Bell Symbols as an Adjunct to Speech-Reading, 316.
Turnbull, Charles S., 222.

Upham, N. Louise, 120.
Urbantschitsch, Prof. V., 398.
Utah Eagle, extracts, 197, 201.

Van Adestine, Gertrude, 415.
Van Allen, H., A Forgotten Worthy (Elijah Griffin), in Deaf-Mutes' Register, 196.
Van Praagh, William, quoted, 179; tablet commemorating, 407.
Vatter, J., on Speech-teaching, 178, 179, 181-182.
Veditz, George W., 409.
"Vicariate of the Senses," *see* Physiology of the Blind, 465.
Vienna, Favoriten Gasse, School, 272.
Visible Speech, *see* Melville Bell Symbols.
Visible Speech Pioneer, refs. to, 13, 14, 202.
Vocabulary for the Deaf Illustrated, 412.
Vogel, Leo, Address on John Hitz, 257; translation by Helen Keller, 259; ref. to, 216.
Voix, La, sa Culture physiologique, by Pierre Bonnier, a review, 101.
Volta Bureau: Gift from Melville Bell, 9; Exhibit at Jamestown, 219; death of Mr. Hitz and appointment of Mr. Booth, 230; Mr. Hitz and the Volta Bureau, 261; Transfer to American Association, 330, 339, 541; Volumes of Institution ptpers, etc., 541; Becomes the charge of the American Association, 541; Agreement between Alexander Graham Bell and the American Association, 542.
Vries, J. G. de, Fear of the Written Word, 174; editorial on, 230.

Wade, William, 66, 328, 540.
Walker, A. H., on the Combined System, 325.
Walker, S. T., retirement, 341, 439.
Walker, W. L., Resolution offered at Ogden, 418.
Walther, Eduard, by A. Hansen, 388; A Few Words upon the Pedagogic System of, by I. Landrain, 505.
Washington, D. C., College and School: W. H. Addison on, 67, 79; A. Hansen on, 60, 61, 62; honorary degrees conferred, 340; new college requirements, 326; normal course, 152; refs. to, 49, 65, 68, 283, 286.
Watson, Thomas A., 135, 234, 452.
Weaver, J. A., Tribute to Dr. Elliott, in Mt. Airy World, 442.
Weeden, Mrs. W. B., 231, 338, 419.
Werner, Friedrich, Psychological Basis of the German Method, a review, 94; editorial on, 112.

West Medford, Mass., School, 59, 65, 73.
Western Pennsylvanian, extract from, 515.
Westervelt, Z. F., Manual Alphabet Method, 434; refs. to, 111, 112, 338, 445, 447.
What the Melville Bell Symbols mean to me, by Mrs. Alexander Graham Bell, 308.
Whipple, Nathan F., obituary, 229.
Williams, Job, 7, 57, 76, 111, 338.
Williams, Kate D., 421.
Wisconsin Times, extract, 196.
Witter, Ruth, retirement, 439.
Wood, S. Frances, 438.
Wright, Grace L., 438.
Wright, John D., 55, 57.
Wright Oral School, *see* New York, Mt. Morris Park West, School.

Yale, Caroline A., 10, 58, 111, 112, 152, 220, 338.
Youth's Companion, ref. to, 514.

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FRANK W. BOOTH, EDITOR

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The Real Romance of the Telephone, or Why Deaf Children in America Need no Longer be Dumb, XX–XXIV FRED DE LAND 1

Special Report upon the Deaf, Based on the Returns of the Twelfth Census—Continued - ALEXANDER GRAHAM BELL 36

A Visit to American Schools for the Deaf - ANDERS HANSEN 48

Report on a Visit to Some of the American Schools for the Deaf - - - - - - - - - W. H. ADDISON 64

A Communication - - - - - - - - MABEL G. BELL 81

The Chefoo, China, School for the Deaf and its Future ANNETTA T. MILLS AND THE COMMITTEE 82

The Eighteenth Meeting of the Convention of American Instructors of the Deaf - - - - - - - - E. M. GALLAUDET 89

Books, Periodicals, and Reports - - - - - - - - - 91

ᎯᏍᏗᏍᎣᏍᏫ ᏫᎠᏁᎾᏁ ᏣᎠᏁᎩᎠᎯᏁᏫᏍᏫᏅ - - - - - - - 110

Editorial Comment - - - - - - - - - - - - 111

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THE REAL ROMANCE OF THE TELEPHONE, OR WHY DEAF CHILDREN IN AMERICA NEED NO LONGER BE DUMB.[1]

BY FRED DE LAND.

CHAPTER XX.

TEACHING VISIBLE SPEECH.

During the winter season of 1868-69, Prof. Alexander Melville Bell delivered a series of six lectures on Elocution and on the value of his symbolic system of Visible Speech in securing correct pronunciation in the teaching of languages, at the Lowell Institute, Boston. During one of these lectures he referred to the aid that Visible Speech had rendered to teachers of deaf children in England. Miss Sarah Fuller, then a teacher of hearing children, attended these lectures and was deeply impressed by the apparent simplicity of Visible Speech and by what was said of its helpfulness to teachers of deaf children. When she was invited to take charge of Boston's School for the Deaf, she recalled Professor Bell's lecture and at once endeavored to learn more about his system of Visible Speech. The Professor had returned to England, but she found certain of his publications in the Boston Public Library. She consulted Prof. Lewis B. Monroe (who had so warmly espoused Mr. Hubbard's cause, and had certified to the good results accomplished by Miss Rogers with the oral method), but he thought that direct personal teaching from one who fully understood Visible Speech was necessary, if it were made the basis of instruction in speech to deaf children. As Miss Fuller could learn of no one in America who possessed the knowledge

[1] Commenced in the October, 1905, number.

requisite to teach the system, she could only await Prof. Bell's return to this country.

On Tuesday evening, October 25, 1870, he opened the Lowell lectures for the season by delivering the first of twelve lectures on Shakespeare and some of his plays. At Miss Fuller's earnest solicitation the members of the School Board called upon Professor Bell and invited him to visit Miss Fuller's school. He graciously accepted the invitation, and after visiting the different classes, expressed his approval of the attainments of the pupils. Miss Fuller then broached the subject of Visible Speech, and he told of the help that his system had been to deaf pupils and their teachers in England. In reply to an inquiry whether during the six weeks he would remain in Boston, he could find time to instruct the teachers in Miss Fuller's school in Visible Speech, he said that he had spent twenty years in developing the system, and did not wish to undertake the work of instruction. However, the knowledge of his son Graham concerning the system was as thorough as his own, and the service of the son could be secured to give the needed instruction if the School Board so desired.

The suggestion was taken under consideration and after thorough discussion, on February 21, 1871, the motion was offered that "the committee be permitted to expend a sum not exceeding $500 for the purpose of special instruction in said school"; but other questions before the board intervened to delay the actual appropriation of the money until March 14. On the 15th, Mr. King wrote to Professor Bell that he was "authorized to invite your son to come to the school as soon as convenient. Please let us know by mail when he will be with us. There is an immense amount of prejudice to be overcome on the part of *the teachers* in this country. We must have a success here. I want our teachers thoroughly instructed, and your son must not leave them until that is accomplished."

This invitation from the School Board was accepted, as explained in a preceding chapter, and thus it came about that Miss Fuller helped to lay the foundation for many of the blessings that humanity has derived from Graham Bell's efforts to promote the welfare of others.

In the bracing climate of the north Graham Bell had nearly regained his health, and was growing robust. Thus he journeyed to Boston, and on April 1, 1871, entered upon his duties

as a teacher of articulation and Visible Speech to teachers of deaf children. In reality his time was divided between the practical instruction of the pupils and the teaching of the theory of the system to the teachers.

Even as a youth Graham Bell was a man of incessant mental activity, who never realized how much he was doing, how constantly he was working to help others, and how rarely he thought of his own health and comfort. While there was a great improvement in his health when he first came to Boston, it was far from satisfactory, and when he returned to his father's home in Canada, on June 21, 1871, he was almost an invalid, because he was so deeply interested in his work and so ambitious to win success that meals and sleep and all that makes for good health became a secondary consideration.

In after years, Dr. Bell publicly said: "I can remember with somewhat of amusement the feelings which actuated myself when I first came into contact with this school. As a student of the mechanism of speech, familiar with it from my childhood, this subject, in fact, having been the professional study of my family for three generations, I realized that deaf children whose vocal organs were perfect could be taught to speak. I understood, of course, that no one naturally speaks a language that he has never heard, and that as a matter of course a child who has never heard the English language could only acquire it by instruction. I was therefore prepared for the claims of my friend, Miss Fuller, that the deaf children of the city of Boston could be taught to speak. But I must confess that I was extremely skeptical in regard to the possibility of their understanding speech by watching the movements of the mouth. It is more difficult for one who is familiar with the mechanism of speech to realize the possibility of this than for one who is ignorant of it; and to be candid, I did not believe it. Of course I was too polite to say so to my friend, Miss Fuller; but still there was that lurking feeling in my mind, that the claim that deaf children could understand the speech of their friends, to any great or useful extent, was too broad. Observation, however, assured me that the children really did seem to understand, to a very useful extent, the utterance of their friends and their teachers; they were not deaf at home; they were not deaf with their teachers; and my curiosity was so much aroused to ascertain the cause of what

seemed from my point of view impossible as to *lead me to make the instruction of the deaf my life work.*"

Notwithstanding his skepticism Graham Bell so heartily entered upon his duties of instructing the teachers in the proper use and value of the system invented by his father, that when a public exhibition was given on June 13, six weeks after instruction began, "it was shown," the school commissioners reported, "that the very youngest children had comprehended the meaning of the symbols. Taking the school as a whole, it was found that during the month of May over three hundred English sounds, which the pupils had formerly failed to utter by imitation, had been obtained by means of Visible Speech. Class illustration was given of the pronunciation of syllables with differences of accent and quantity, and individual illustrations of the perfect utterances of words and sentences. Adult deaf-mutes were present who had acquired all the sounds of the English language in ten lessons, and who could articulate a large number of words with absolute correctness. One pupil of the school, to whom special instruction had been given in the principles of elocution, read Longfellow's 'Psalm of Life,' from elocutionary marks with natural and expressive inflections of the voice...."

All that may seem very trite thirty-five years later. Nevertheless it was the sensation of the day among the educators of that time. And perhaps its relative value in further stimulating public sentiment in favor of oral education for the deaf, may be shown more clearly by a brief quotation from the report the school committee had made only a few months previous: "The teachers are working with extraordinary patience and earnestness, and the results of their instruction have exceeded expectation. Still it is a question whether it will not be found necessary to supplement the method here used by others, which have long been employed, *such as the manual alphabet or the natural language of signs.*"

How different was the tenor of the official report twelve months later, when the supposed need of signs and manual alphabet had vanished, and achievement and victory permeated every line of a report pregnant with the possibilities that make for and underlie all happiness and all welfare of deaf children: "... Perhaps nothing has contributed so much during the year to the value of the instruction of this school, as the introduction of Visible Speech.... By means of this system *deaf-mutes can be*

taught to articulate correctly." And Miss Fuller stated that "if we had begun our work with a full knowledge of this system, we should have been spared a great amount of difficult and often discouraging labor, and produced much better results." And, later, she stated that "the widespread interest felt in this country in articulation teaching, and the success of the work, are undoubtedly due to the system of Visible Speech."

In 1871, Graham Bell instructed the teachers in the Clarke school in the use of his father's system of Visible Speech. The annual report states that "better results have been attained in three months than ever before in the same period of time; and in the matter of tone, compass, modulation, and inflection of the voice, results never before attained at all." A report dated October 1, 1872, stated: "Greater and better results have been obtained with new pupils, than were possible by the German method. On the part of advanced pupils too, some defects in articulation have been corrected which imitation had failed to correct."

After instructing the teachers at the Clarke School, at Northampton, and teachers in other schools, Graham Bell returned to Boston and resumed his instructions at Miss Fuller's school. In the annual report of the school commissioners are the details of an examination held in December, 1871, to exhibit the progress several pupils had made. One of these pupils was Miss Dudley, the daughter of the member of the legislature who was working earnestly in behalf of deaf children. The report states that Mr. Bell said: "Miss Dudley has been under my instruction for three months. The improvement manifest may be emphatically summed up in the one word 'power.' She has obtained power over the instrument of speech, — such power that she can produce the elementary sounds of foreign languages as well as those of English, by merely studying their symbols; that she can vary her voice in *quality* as well as pitch, sustain it on a level, or inflect it at will, and that she can appreciate certain musical intervals. I have devoted principal attention to Miss Dudley's articulation. In Miss Jennings' case I have aimed at the cultivation of the voice, and the communication of elocutionary principles. Miss Dudley varies her voice *mechanically*, but Miss Jennings can now associate a feeling with every inflection. The latter also possesses the mysterious power of appreciating *relative pitch.* Both of these young ladies are apparently *totally deaf.* I

shall now write a few exercises on the board for Miss Dudley to read. The sounds will be of such a nature that it would be impossible for her to give them by imitation alone. I shall write German and French sounds, and some in the Zulu language containing Hottentot clicks that would defy the imitative powers of anyone here present." The report adds: "Mr. Bell then wrote on the board in symbols of Visible Speech sentences in English, in German, and in French, and some words in the Zulu language containing Hottentot clicks never heard in our speech; all of which Miss Dudley read slowly, but with surprising correctness, and gave the clicks in a way nobody else could imitate. She afterwards read from her symbols of Visible Speech the Lord's Prayer, slowly but very distinctly, with almost faultless articulation, and with apparently deep feeling."

On June 19, 1871, the superintendent of the schools in Boston, Mr. John D. Philbrick, in referring to the examinations in Miss Fuller's school, wrote: "I wish to express very strongly my approval of the course of your committee in employing Mr. Graham Bell to teach Visible Speech in your school. The results of his instruction are more than satisfactory, they are wonderful. His system must speedily revolutionize the teaching in all articulating deaf-mute schools." And at the close of the year Mr. Philbrick wrote: "The result of this experiment with Visible Speech seems to be very significant. It convinced me of the practicability of teaching even congenital mutes perfect articulation, and, also, that by the system of Visible Speech good articulation can be secured in much less time than is required to produce the same result without its use. It is in fact a new and powerful instrumentality in the instruction of deaf-mutes."

The year following his remarkable achievements in Miss Fuller's school, Graham Bell was invited to the leading institution for the deaf in America, and the stronghold of advocates of the sign-language, the American Asylum at Hartford. It had "completed its fiftieth year" on April 15, 1867, the very year that Mr. Hubbard won educational liberty for deaf children. In its fifty-first annual report the statement appears that "the great mass of deaf-mutes, comprising more than nine-tenths of the whole number, can be satisfactorily taught only by the use, in the first instance of their own natural language of signs."

According to the annual report of the American Asylum, Graham Bell "commenced his labors upon the first of May (1872).

.... Instruction was regularly given to a class of twenty-five semi-mutes.... We consider it better than former methods ...." The next year the report stated: ".... Two of the teachers have devoted their whole time to the instruction of forty-six pupils in Bell's method of Visible Speech.... The experiment has been attended with considerable inconvenience and trouble from the necessity for the entirely separate instruction of small numbers at a time, but the improvement made has been decided. Pupils have conquered difficulties in pronunciation and in vocal sounds *unconquerable by previous methods.*" A year later the report read: ".... Visible Speech has proved a powerful aid in their instruction.... Many defects in speech which before were beyond our power to remedy, have been corrected.... We consider Visible Speech as deserving a place in our school." Early in 1873, Mr. Stone stated: "I consider Visible Speech far superior to any method I have known for teaching articulation: *the hopes of the deaf-mutes* in this direction *seem* to *rest upon it.*" And, in August, 1878, Mr. Williams stated: "For the past three years we have given every pupil entering the school a very thorough trial in speech and lip-reading." In the annual report for 1885, attention is called to a student who left the school in 1876, a successful shoe merchant, transacting "business with a great variety of customers, relying almost wholly upon speech and lip-reading."

Yet it was the principal of this same American Asylum, who, nine years before, testified before a joint committee of the Massachusetts legislature, in 1867, that "the recovery of articulation costs more than it is worth. .... the attempt to teach articulation has never been a part of the regular system of instruction of the deaf and dumb, and *I hope never will be*.... We cannot make them (the deaf-born) understand the use of vocal language, with its articulation, its emphasis, its point. It has never been done; *it never can be done.*"

Visible Speech was also introduced in the Washington Institution in 1872, and the following year, Dr. E. M. Gallaudet, previously the pronounced advocate of the value of the sign-language, said, in referring to Prof. Bell's Visible Speech: "Teachers of deaf-mutes generally, are disposed to accept this new process of teaching articulation to the deaf as an important contribution to the existing means of educating this class of persons, and it is believed that within a very few years it will find wide acceptance and approval."

At the Seventh Summer Meeting, Miss Rogers, in replying to repeated requests for some remarks, said in part: "If I could have had the knowledge of Visible Speech when I began the work I could have taught far better than I did. I did not have it, and had to feel my way. Such ignorance as mine was I would not accept in a teacher in these days. I think it would be wrong—yes, a sin—for any of you to begin the work of teaching deaf children to speak when you were as ignorant as I was when I began; but there was no help for it then—none that I knew. I hope you will appreciate the advantages you have, and will do all you possibly can to gain skill in your work, especially by becoming very familiar with Visible Speech."

Although Visible Speech was utilized by the leading sign-institutions within three years after its introduction in Boston, in 1871, it must not be supposed that the system encountered no obstructionists in its progress. On the contrary many disputatious individuals, starting with a false conception of its aim and purpose used good paper and printers' ink in striving to prove that "the symbols of Visible Speech can no more assist a mute in his attempts at vocal utterance than the signs of the zodiac.... we desire only to demonstrate that the means by which he obtains articulation from deaf-mutes are not the symbols of Visible Speech, but his pupils' sense of vision and feeling, and their imitative faculties; and above all, their teacher's mechanical skill in forcing the tongue into the requisite positions for the respective sounds of the alphabet by means of the manipulator (an ivory blade, or spatula or paper-cutter)." Another writer stated: "We are thoroughly convinced that instead of Visible Speech being a help in teaching deaf-mutes to articulate, it is a great hindrance."

Ten years later, that is in 1884, it was stated that "the cause of articulation for the deaf, in this country, *owes much to Visible Speech*, both from the study of vocal physiology to which it had led, and from the fact that it has offered, through its students, almost the only source of supply for the recent and urgent demand for articulation teachers."

In 1890, at the twelfth convention of American Instructors of the Deaf, and the first international convention, Dr. Isaac Lewis Peet, in a scholarly address on "The Relation of the Sign-language to the Education of the Deaf," said: "Articulate speech has been so analyzed that its elements are very generally under-

stood among teachers of the deaf. The positions of the organs employed in producing it have been so clearly defined that the elements of a spoken word are recognizable by the eye, and capable of being imitated by movements of the organs of speech. Speech has been made visible and silence has been made vocal.

"For this result, a debt of gratitude has been incurred to Professor A. Melville Bell, the distinguished leader in the investigation of vocal physiology, whose works must be regarded as the latest and best authority upon every variety of vocal utterance. By his Visible Speech an alphabetic form may be conferred upon every spoken language that has not already been reduced to writing, and the pronunciation of every written language can be presented to the eye. A similar debt is due to Dr. A. Graham Bell, who, better known to fame through inventions of vast moment, is yet known and honored for having devised and introduced an application of his father's system to the case of the deaf-mute. By following out its principles, it is quite possible to teach every deaf-mute to discern, at first slowly, but afterwards more rapidly, the elements of every word as spoken by his teacher, and then to place his own vocal organs in the position that he has recognized as necessary to the production of what he has been told is sound. In this way every intelligent deaf-mute, may, if his vocal organs be perfect, be taught to give in speech with at least approximate distinctness, such language as he knows, and to read the lips of at least one person."

At the Thirteenth Convention of American Instructors of the Deaf, held in Chicago, in July, 1893, the president of the convention, Dr. E. M. Gallaudet, offered the following resolution, which was unanimously adopted:—"*Resolved*, That the thanks of the Convention of American Instructors of the Deaf are hereby extended to Professor A. Melville Bell, of Washington, for his generous gift of $15,000 to the Volta Bureau for the Increase and Diffusion of Knowledge Relating to the Deaf." And the Convention was informed that Professor Bell had also presented to the Volta Bureau the copyrights to all his valuable publications, and had contributed in other ways to promoting its high efficiency.

At the World's Congress of Instructors of the Deaf, held in Chicago, in 1893, Dr. A. L. E. Crouter, principal of the Pennsylvania Institution for the Deaf and Dumb, in referring "to the suggestive and instructive statistics presented by Dr. Bell" to

the Congress, said: ".... In conclusion, I would add my appreciation of the able and exhaustive manner in which these statistics have been collected and collated. The profession is under lasting obligations to Dr. Alexander Graham Bell for the time and study and expense he has so generously bestowed upon this subject, which, to most minds is dry and uninteresting. *To Dr. Bell more than to any other man* not directly connected with the work, are we indebted for the great advance made in teaching speech to the deaf, and in the establishment of oral schools of instruction throughout the country."

CHAPTER XXI.

"No Single Influence Has Done So Much."

In July, 1891, at the Lake George meeting of the American Association, Miss Caroline A. Yale, principal of the Clarke School for the Deaf, in a valuable paper on the "History and Development of Articulation Teaching in America," said: "Visible Speech is the most scientific attempt that has been made to devise characters which should represent each elementary sound by representing the position necessary to produce it.... Perhaps *no single influence has done so much* for the improvement of articulation work in America as the introduction of the system of Visible Speech. The absence of any possible connection between the symbols and the elements which they represent except through their pictorial character gives them a value intrinsically their own. Though at this date the symbols of Visible Speech are taught to the pupils in but few schools, the distinctness of knowledge which familiarity with them has given some of our teachers cannot be over-estimated, and, in general, in no other way has the work been advanced so much as by the greater attention to the study of ways and means on the part of the teachers."

And at the second summer meeting held at Lake George, in 1892, in an able address on "How Can We Best Fit Ourselves to Teach Speech to the Deaf," Miss Yale said, in part: "A fourth topic for the teacher's study should be the exact *formation of each elementary sound.* This study cannot be made too thorough and critical. The adjustment of the organs, the contour of each, the size and shape of apertures, and the character of the action of each organ should become most familiar. To this end

the use of diagrams is of much value, as a means of representing varying positions, and as in themselves abbreviated diagrams no aid is to be compared with a close study of the symbols of Prof. Alexander Melville Bell's 'System of Visible Speech.' So long as these symbols are kept pictorial in their significance the value is immeasurable.... In order to gain a knowledge of the formation and development of English sounds, first of all study Visible Speech."

In view of Miss Yale's conservative statement: "Perhaps no single influence has done so much for the improvement of Articulation Work in America as the introduction of the system of Visible Speech," it is interesting to note the manner in which the general use of Visible Speech was advocated thirty years ago, and to observe how closely the radical ideas then promulgated conform to the accepted teachings of the leading schools today.

In August, 1872, at the National Conference of principals of institutions for the education of the deaf and dumb, held at Flint, Michigan, Alexander Graham Bell advocated the practicability of enabling deaf-mutes to articulate clearly and intelligibly; illustrated his method of instructing deaf-mutes in the elementary principles of Visible Speech; gave a number of difficult tests to show with what accuracy the symbols of Visible Speech may be used in aiding deaf-mutes to acquire the power of mechanical speech, to articulate correctly; stated that he would advise not giving the pupil the meaning of any word until the power of pronouncing it had first been obtained, advising fluency of articulation before definition of the spoken words, etc. After a thorough discussion of the value of Visible Speech, it was unanimously resolved "that the system of Visible Speech impresses the members of the conference as being philosophical, and that it promises great aid in the instruction of deaf-mutes in articulation; that it is deserving of a thorough experiment in our institutions, and that it may be especially useful in the correction of defective utterance among semi-mutes."

An excellent illustration of the breadth and the clearness of Dr. Bell's conception of his subject, in 1872, is shown in the following excerpts from this address at the Flint conference, concerning the quality of the voice, remarks of peculiar interest in view of the experiments he was then carrying on that finally culminated in the inventon of the telephone. Dr. Bell, then only twenty-five years of age, said: "The belief has been and is preva-

lent, among those who have not examined into the matter, that there is some real defect in the mouth that incapacitates it for utterance, and I know that even some teachers of the deaf and dumb (judging, I presume, from the disagreeable noises made by their pupils) imagine that the throat, at all events, is affected, and hence conclude that the quality of the voice must always be unpleasant. But the fact is that the quality of the voice depends very little upon the throat. Indeed, if we could hear the voice as it proceeds from the glottis, I doubt whether it would be materially different from that produced by the reed of a musical instrument.

"Speech is a mere motion of the air. If we cast a stone into water, we see the ever-widening circles of waves that proceed from the centre of commotion. A somewhat similar series of undulations comes from the mouth of a speaker. On the water each successive ripple is the picture of the one preceding it: but the sound waves that succeed each other are of different shapes and sizes. The number of undulations within a certain space give rise to *pitch*, the height or size of a ripple determines the *force* of *loudness*, and the shape of a wave gives the quality or *timbre*.

"In speech, the air within the lungs is urged forward by the action of the diaphragm into the larynx. It is there split up into waves by the vibration of the vocal chords, and these waves are moulded (so to speak) in passing through the pharynx and mouth. Hence, in any vocal sound the force is produced by the action of the diaphragm, the pitch by the vibration of the vocal chords, and the *timbre* by the pharynx and by the mouth.

"Since we can represent, by means of symbols, any position of the mouth and pharynx, Visible Speech is capable of affecting the quality of the voice. Of all the pupils in the American Asylum I do not think there were more than a dozen whose voices could be called harsh. In every case where the experiment was tried the *timbre* was successfully corrected."

Twenty-three years later, at the fourteenth Convention of American Instructors of the Deaf, held in Flint, Michigan, in July, 1895, Dr. Bell, in referring to the growth of the oral movement, said: "At the first meeting of principals, held in this city in 1872, I presented to the profession the system of Visible Speech that had been introduced by my father, as a means of representing the sounds of all languages, the letters represented the position of the vocal chords, in forming certain sounds, and they saw

that this system might become of value to teachers in all schools, by whatever method of instruction, for developing the powers of speech of the pupils. This system was introduced into this country in 1871, by Miss Fuller, whose work you all know. The board met and thought about it, and invited me to come to Boston to make the experiment, and that was the cause of my appearance in this place. The experiment was made, and, as a result, the system was introduced into several schools....."

During the year following his success with the pupils of Miss Fuller and Miss Rogers, and at Hartford, Graham Bell continued to reside at his father's home in Canada, visiting the different institutions in the United States, as requested, and remaining a month or two at each. Then requests from institutions for the deaf increased in number so rapidly as to preclude the possibility of his accepting even a majority. Thus it was thought to be the wiser plan to have the teachers come to Graham Bell. With that end in view he transferred his residence from Canada to the United States on October 1, 1872, and during the next year lived at 35 West Newton Street, Boston. Here he opened a normal training school for the special benefit of teachers of articulation to the deaf, but gave instruction in Visible Speech to teachers, to students desiring to become teachers, and even to deaf pupils.

This normal school was called the "School of Vocal Physiology." The first circular sent out bore the title: "Establishment for the study of vocal physiology; for the correction of stammering, and other defects of utterance; and for practical instruction in Visible Speech, conducted by Alex. Graham Bell, member of "Philological Society of London, England." In this school the theory of his father's system was easily explained and practically illustrated by Dr. Bell. But to afford a greater range in practical demonstrations of the utility of Visible Speech, and of the art of teaching the deaf, he organized a private school of deaf-mutes of all ages to whom free instruction in articulation was given by the students under Dr. Bell's supervision. He also formed a class of hearing pupils having defective speech, to illustrate how readily many defects may be permanently cured. The members of both classes formed excellent experimental subjects for the teachers to practice upon, and at one time there were about sixty prospective teachers under instruction.

Graham Bell contributed descriptions of his father's system of Visible Speech to several periodicals during 1872; and early in 1874 a manuscript periodical entitled *The Visible Speech Pioneer*

was sent to institutions and schools employing this system of symbols in the instruction of pupils. The first number appeared on March 21, and contained the following, among other items:

"It is not believed that the art of symbolizing speech has yet reached perfection; nor is it thought that the best mode of employing the symbols in the instruction of the deaf has yet been devised. *The Visible Speech Pioneer* will afford a means of communication between teachers of the system, and it is hoped that the varied experiences of all may be brought to bear upon the subject. In this way better and better methods of instruction must arise, and the time will come when the term *'dumb'* shall be considered a reproach when applied to the deaf.

"The School of Vocal Physiology which gives birth to this periodical has been established for the purpose of applying the necessary training, and it has been decided to encourage the thorough mastery of the physiological symbols, by granting diplomas to those who may attain proficiency in the art of symbolizing the actions of speech. The first examination of students of Visible Speech will be held in the Boston University, on Saturday, the 27th day of June, 1874."

The fourth number of the *Pioneer* appeared on April 13, 1874, and contained Graham Bell's address on Lip Reading at the first Convention of Teachers of Visible Speech.

For the season of 1876-77 the first term of the normal training school opened October 11, and closed December 22, 1876, while the second term opened January 8, and closed May 16, 1877.

The members of the normal class had one hour's instruction daily, except on Saturday and Sunday. They also had the privilege of witnessing, and were encouraged to participate in the instruction imparted by Graham Bell to a class of stammerers, a class of deaf articulators, and a class of deaf-mutes—a beginners' class.

The terms for the complete normal course was $100. Examination December 16, 1876, and May 15, 1877. Graduation day was May 22, 1877.

Among the graduates were the following:

Class of 1874-75.

Bond, Miss Annie E., Boston, Mass.
Fuller, Miss Sarah, Newton Lower Falls, Mass.
Locke, Miss Abbie A., Buffalo, N. Y.

Class of 1875-76.

Butterfield, Mr. L. A., Boston, Mass.
Crane, Mr. Edward B., Boston, Mass.
Crane, Mrs. H. K., Boston, Mass.
Crozier, Mrs. M. L., Charlestown, Mass.
Farrant, Miss Isabel, Salem, Mass.
Jones, Mrs. Julia A., Westfield, Mass.
Littlefield, Miss S. E., East Boston, Mass.
Mack, Miss Annie E., Belmont, Mass.
Rich, Miss Alice, Boston, Mass.
Worcester, Miss Alice, Thetford, Vt.

Class of 1876-77.

Allen, Miss Susie W., Lowell, Mass.
Ballard, Miss Eva, Framingham, Mass.
Fearing, Miss C. W., Boston Highlands, Mass.
Forriston, Miss Elizabeth R., Chelsea, Mass.
Jordan, Miss Sarah A., Newton Lower Falls, Mass.
Leonard, Miss Annie R., Southbridge, Mass.
Maynard, Miss Inez N., Northboro, Mass.
Osgood, Mr. Fletcher, Chelsea, Mass.
Richards, Miss Laura D., Boston, Mass.
Robinson, Miss Lucy E., Indianapolis, Ind.
Stone, Miss Fannie M., Belmont, Mass.
Summers, Miss Sarah L. D., Jamaica Plain, Mass.

Undergraduates.

Fish, Miss Emeline D.
McGann, Miss Hattie.
Williams, Miss D. N.
Williams, Miss K. D.
White, Miss Manilla.

In 1873, Graham Bell was appointed professor of vocal physiology in the School of Oratory of the Boston University where, in addition to training students in the culture of the voice and the mechanism of speech, he continued to give instruction in Visible Speech to all who were preparing to teach articulation to the deaf. But his private school for the deaf was then transferred to Salem.

This school of oratory had been established by Professor Monroe, a noted teacher of expression in elocution and a warm friend of Mr. Hubbard and Graham Bell. Following the commercial acceptance of the telephone, Dr. Bell resigned the professor-

ship and was succeeded by his pupil, Mr. L. A. Butterfield. That particular school is said to have ceased existence on the death of Professor Monroe; but later Mr. Butterfield established another school of instruction in Boston. Mr. Butterfield wrote: "Professor Monroe was preeminently a teacher of expression in elocution, and he left to Graham Bell the teaching of articulation and Visible Speech. These, as Professor Bell said, had been and could be applied successfully to the cure of defects of speech. Those who thoroughly studied this Visible Speech with Graham Bell in these first two years of the school had an excellent groundwork for a cure of these defects."

Speaking of this school in 1884, Dr. Bell said: "A number of years ago the Boston University established in connection with its departments a school of oratory under the leadership of the lamented Lewis B. Monroe, of Boston; and every articulation teacher, whether a teacher of the deaf or a teacher of the hearing, should remember with gratitude the labors of Prof. Monroe. He established this school of oratory in connection with the Boston University for the study of just these subjects,—for the study of elocution, the study of the mechanism of the voice, the study of vocal physiology; and from the pupils of that school were selected a class to have special instruction from me and from others regarding the special needs of the deaf; and from that class were drawn many of the articulation teachers that we have present in this convention. But a few years ago an important event led to my withdrawal from the active work of instruction in the School of Oratory—the invention of the speaking telephone. Another important event destroyed the School of Oratory—the death of Lewis B. Monroe (in the summer of 1879). The special department for the instruction of teachers in the subject of Visible Speech was for some time carried on, and I rather think is still carried on, but not in connection with any school of oratory or in connection with the University, by my late colleague, Prof. Alonzo Butterfield. I hoped to have seen him here in this convention; but not having actually been engaged in the work myself for a number of years, I am really unable to give the condition of this school. If the School of Oratory were still in existence, you would have the very thing you want, but it is all dead."

In 1880, Dr. Butterfield, then professor of vocal physiology and mechanism of speech in the Boston School of Vocal Physiology, wrote: "Visible Speech will be invaluable in mission fields.

The difficulties which missionaries have experienced in acquiring the pronunciation of the natives of any country and in teaching the natives the pronunciation of their languages, will readily disappear by the use of this system. Visible Speech has already been introduced into China by a missionary from Scotland. Large portions of the New Testament have been translated into the Chinese spoken language and printed in Visible Speech symbols. The Chinese written language and the Chinese spoken language are two distinct languages. The Chinese spoken language had *never been written nor printed until Visible Speech was employed for that purpose....* The discovery of the principles of Visible Speech has made possible the construction and establishment of a universal language."

On Saturday, January 24, 1874, at the First Convention of Articulation Teachers of the Deaf employing Prof. A. Melville Bell's system of Visible Speech, which met in the High-School building, Worcester, Graham Bell delivered an interesting address on the visibility of speech, dividing his subject into the visibility of elementary sounds, or syllables, of words, and of sentences, showed how context is often the key to lip-reading, suggested aids that the lip-reader should render and those that should come from the speaker, etc. The paper was discussed by Prof. Lewis B. Monroe, Prof. Charles Treat, Dr. Ira Allen, Miss Rogers, Miss Fuller, and others.

On Saturday, June 13, 1874, at the Second Convention of Articulation Teachers of the Deaf, held in Worcester, Graham Bell exhibited several methods of visualizing speech. This will be explained more fully in a following chapter.

On July 17, 1874, at the eighth convention of American Instructors of the Deaf, held at Belleville, province of Ontario, Canada, Graham Bell gave an interesting address on the subject of Visible Speech, and its applicability to the instruction of the deaf. He said:

".... The experiments we have just made prove that a person may be directed by these symbols, *how to pronounce sounds that he has never heard.* Deafness need, therefore, be no bar to the acquirement of articulation, if your teachers will accept assistance from Visible Speech. I know that there is an idea prevalent, even among teachers of the deaf, that there is some real defect in the vocal organs of deaf-mutes that incapacitates them from acquiring a good pronunciation. We do not sufficiently

realize the fact that deaf-mutes are dumb, merely because they are deaf. No one would dream of supposing that our mouths were defective because we do not talk Chinese. The simple fact of the matter is that we have never heard that language. It is the same with the deaf-mute. He lives in a world of hearing people, and has been surrounded from his birth by those who talk; but alas! not one sound has ever entered the closed portals of his ears. With all the organs of speech perfect, he is dumb merely because he does not know what to do. If we would teach the deaf-mute to speak, we must of course appeal to other senses than that of hearing. If it were possible for the unassisted eye to discover the mechanism of speech, deaf-mutes would have learned to articulate of themselves long ago; but it is not the case. Many sounds depend upon the adjustment of organs that are quite concealed from observation. By means of these physiological symbols alone can we reveal to the deaf-mute's eye the concealed mechanism of speech. Since there is in the deaf-mute no other natural defect than that of hearing, it is certainly possible to make him like hearing people in every other respect. The time is coming when the term 'dumb' or 'mute' will be considered as a reproach when applied to the deaf. The old dogma 'without hearing, no speech; without speech, no reason,' placed deaf-mutes hopelessly among the idiots and insane. We know how recently they have been elevated to the rank of civilized human beings. We see the injustice of former times, but alas! we are too often blind to that of our own. We recognize at once that deaf-mutes can be taught to think without speech, but alas! how few are they who believe that they can be taught to speak without hearing. People outside of the profession look with incredulity at deaf-mutes, and wonder that they can be taught to think in written words as we think in speech. When deaf-mutes are taught to speak as well as to think, people look upon it as a kind of miracle. The results that are now looked upon with so much wonder, will ere long become every-day facts, and future generations will look back with surprise to the time when civilized nations could allow children that were merely deaf, to grow up with undeveloped minds, and dumb....

"Deaf children are delighted to see their own noises represented upon the blackboard. It encourages them to make new attempts to vary upon the original sounds. The children emulate each other to see who will produce the greatest variety of

noises. They describe the symbols for all these sounds by the means of signs. In process of time they discover that these signs are really descriptive of the physiological actions that accompany the sounds. They are thus led to observe the movements that occur in the larynx, pharynx, or back parts of the mouth, while they are uttering their noises. In this way they are taught to recognize and to control the movements of organs concealed from direct observations. When this stage has been reached, the teacher, instead of following the lead of the pupil, turns round and requires the pupil to follow his guidance. He leads him, by the analogies of the symbols, from his own animal noises to the articulation of English sounds. Every stage of the process is pleasant to the child. He is not discouraged by disheartening repetitions. The process may seem slow and round-about but it is *sure.*"

On the following day, during the discussion of a paper on the "Physiological Peculiarities of Deafness" by Dr. George Wing, Graham Bell mentioned "certain experiments he had made upon the development of the sense of hearing of the semi-deaf. He had been surprised on visiting institutions for deaf-mutes to find that the semi-deaf had been left without artificial aids to hearing. Instruments of all sizes and shapes were to be had, from the artificial membrane itself up to the hearing trumpet shown by Dr. Wing." Yet Graham Bell felt that he was right in saying that even in articulation schools no use had been made of hearing trumpets until he suggested it.

Then Graham Bell described the excellent results he secured in educating the power of hearing through the instrumentality of a hearing-tube, and cited a number of cases where persons possessed of a sufficient amount of hearing to be more properly designated "hard of hearing" than deaf, had been allowed to grow to manhood or womanhood as deaf-mutes. One case was that of a young man educated as a deaf-mute, taught by means of the sign-language, married to a deaf-mute, and mingling with deaf-mutes. Yet, in a short time, under Graham Bell's care, this young man was able to "hear and understand words and sentences when spoken in a low tone of voice about six inches from his ear." Graham Bell was "surprised to find how many so-called congenital deaf-mutes had partial hearing. He believed that a large number of them could be taught to articulate without any other artificial means than a hearing-tube. It was difficult to ascertain

the extent of hearing possessed by a deaf-mute. He had seen persons utter words and sentences to deaf-mutes through the hearing trumpet. The pupil would shake his head and be unable to imitate anything; so the experimenter would declare, 'It is plain *that* boy has no hearing.' Now, such a test as that was no test at all. He thought it would puzzle many of those present, possessing the faculty of hearing in perfection, to imitate the pronunciation of a Chinaman or a Dutchman—at least at the first attempt. It would certainly be very hard if he attributed their inability to deafness! But spoken language was just as foreign to the ears of a deaf child as Chinese or Dutch was to theirs."

In 1884, Dr. Bell was asked if he still advocated "the use of his physiological symbols in teaching the deaf to speak?" He replied: "Certainly I do. I advocate a greater use of them, and I advocate even simplifying and making the characters so simple that even the *youngest* child can use them and that teachers can use them with greater facility. I actually advocate a shorthand form of Visible Speech, called by my father Line Writing, because you can use it with such rapidity. The great objection to ordinary symbols is that we use in our schools the printed form of the letters. We have several forms of alphabets; we have printed characters, we have script characters. Now if you are communicating with a person by writing, if you are obliged to communicate by capital letters, it will be a pretty slow and difficult thing, and so in using my father's physiological symbols. I am proposing a greater use of them than has ever been made, and using the shorthand form of the character so that we may write with the speed of speech more nearly than with the speed of printing.... I have considered the advisability of using the line-writing as my father gave it, and the advisability of joining the letters together in the latter part of his work; but I came to the conclusion that it was better to separate the letters, so that the same letter should always come in the same relative position. In shorthand writing you go up and down from the line, and the same letter may stand for two words, and although it is very much more rapid when the letters are joined together, it is simpler and clearer, I think, to write them separately. It makes a clearer picture, and the writing is more rapid than anything else excepting shorthand itself."

CHAPTER XXII.

Visualizing Vibrations of Speech.

On Saturday, June 13, 1874, a second convention of articulation teachers was held in the Walnut street school-house, Worcester, as noted in the preceding chapter. Several important papers on the subjects of articulation and of lip-reading were read. Then Graham Bell described the method of investigating the mechanism of speech invented by Mr. Oakley Coles, of England, and followed with an exhibition of visualizing vibrations of speech with the aid of Koenig's manometric capsule and Morey's improvement of Scott's phonautograph. It will be recalled that when Dr. Bell first met Miss Fuller, he was rather skeptical that deaf-mutes could be taught to read speech. But this skepticism was soon dissipated by the admirable examples constantly before him in Miss Fuller's school. Yet it proved beneficial in leading him to devise a number of instruments in the effort to invent one that would enable deaf children to read speech from graphic presentations of the inflections and modulations of the speaker's words. For then he believed that these illustrations might prove more serviceable than the simple and natural method of watching the movements of the lips and the vocal organs. His first aim was to invent an instrument of serviceable dimensions that should visualize the vibrations of the air set in motion by the spoken word. Following Koenig's method in producing manometric flames, Graham Bell used a membranous diaphragm to divide an oval container into two compartments. Into one he fitted a gas tube, while the other served as a mouth-piece. Igniting the freely-flowing gas produced a narrow needle-like flame. In a sense the flow of gas was controlled by the vibrations of the membrane after the same fashion that the metal diaphragm in the transmitter of the telephone now accelerates the flow of battery current through pressure on the carbon granules. Thus every sound impinging on the membrane caused a corresponding fluctuation in the length and the shape of the gas-flame. Then, by the aid of a set of rotating mirrors, these changing flame-shapes were reflected in ribbon-like, serrated-edged wave-forms that are best described as visualized vowel-sounds. In other words, these fleeting reflections were similar in character to the tracings now recorded on the wax cylinder of the modern phonograph, or its early

prototype, the cylinder of paper coated with lamp-black so familiar to experimenters with the phonautograph devised by Leon Scott, in 1855.

But though he succeeded in disassociating and reflecting in a mirror the elemental components of sound-waves, Graham Bell realized that these shadow-graphs were of too evanescent a character to prove serviceable in ordinary conversation; and to procure permanent shadow-pictures by photographic or other process, would prove expensive. So his next step was to find a method by which a permanent record could be economically obtained. At the Massachusetts Institute of Technology he found an improved form of Scott's phonautograph made by one of the students, a Mr. Charles A. Morey, having a long wooden stylus that afforded enlarged tracings of each movement of the diaphragm, tracings that could be preserved for study and comparison.

Graham Bell had made a thorough anatomical study of the marvelous mechanism of the human ear and was familiar with its many functions. He knew that the external ear serves not only as an ornamental appendage but as a collector or deflector of sound, which, passing through the tubular entrance-way, impinges on the delicate membrane called the drumhead, or drum-skin, which separates the external from the internal ear; that this middle apartment contains the ossicles of hearing, the chain of three small movable bones separately known as the malleus or hammer, the incus or anvil, and the stapes or stirrup, which relay and convey the vibrations of the drumhead to the internal ear, the true seat of sound sensation and separation; that this inner apartment contains Corti's organ of ten thousand strings, which receive sounds through the filaments of the auditory nerve fibres, and there untangles, translates and distributes in harmonic order every variation in tone that the human ear can distinguish. (Dr. Hewson, in referring to Corti's organ, has stated: "We have here what might be called a musical instrument, which is designed, not to produce sounds, but to render them perceptible, and which is similiar in construction to artificial musical instruments, but which far surpasses them in delicacy, as well as in the simplicity of its execution. Hence it is that the organ of Corti has been likened to the keys of a piano; but while in a piano every string must have a separate hammer, by means of which certain sound is produced, the ear possesses a single hammer of an ingenious

form in its ear bones, which can make every string of the organ of Corti sound separately. There are three thousand rods of Corti in the human ear. This would give about four hundred to each of the seven octaves which the human ear can appreciate. Thus we have about thirty-two for each semi-tone. According to Weber, an accomplished musician can appreciate the one-sixty-fourth of a tone.")

Thus it came about that while Graham Bell was watching the wooden stylus trace the curves that correspond to the vocal sounds he caused to impinge upon the diaphragm of Morey's phonautograph, he was impressed with the similarity of action between the movements of the stylus when actuated by the vibratory diaphragm and the motions of the small bones of the ear when the drumhead is set in motion by the impact of sound-waves. And this led him to wonder whether a modified form of phonautograph modeled upon the mechanism of the human ear, would yield more desirable results. With this thought in mind, he consulted with Dr. Clarence J. Blake, an eminent aurist in Boston, professor of otology in Harvard University, and aural surgeon to the Massachusetts Eye and Ear Infirmary, who suggested that in place of an imitation ear, it would be far more satisfactory to use the human ear itself. This novel idea favorably impressed Graham Bell, and, at his request, Dr. Blake secured and prepared an excellent specimen which was made joint use of in carrying on their respective investigations, so closely allied, during the spring and summer of 1874.

The ear secured by Dr. Blake was suitably prepared and mounted on the arm of a stand supporting the mechanism to automatically move a plate of glass in a given direction and at a given speed, while a cylinder or receiver was placed to convey the sound of the voice directly into the ear. One bone in the ear, the stapes, had been removed; then to the incus was glued a selected fibre of wheat straw which extended downward nearly an inch, barely touching the smoked surface of the glass plate; while the necessary mobility of the drumhead and the small bones was obtained by moistening with a mixture of glycerine and water. Then, when Graham Bell sang or talked, laughed or shouted into the receiver, the drumhead of that prepared ear would take up all the vibrations of the voice, as well as all their differentiating characteristics, and pass them on to the stylus which, in turn, accurately copied or recorded them on the sooty surface of the

glass in the form of exquisite tracings. Of the many different sounds that were uttered, each had its own distinguishing characteristics accurately recorded, thus indicating that the particular air particle which produced each given sound performed its mission in a manner peculiar only to that individual sound and in no way common to other sounds.

The records of the Essex Institute of Salem, Massachusetts, show that at the regular meeting, held on Monday, January 18, 1875, Graham Bell "occupied the evening with a singularly interesting and curiously instructive address on the subject of speech, with illustrative experiments of various kinds." With the aid of a camera operated by Rev. E. C. Bolles, Graham Bell exhibited for the first time to a public audience, a large number of tracings he and Dr. Clarence J. Blake had secured in visualizing vibrations of speech. The record reads: "He averred that each note was not a single tone, as it appears to be, but a composite of several, including the fundamental, or loudest, with the addition of overtones and undertones; there was no such thing as a tone pure and simple. He explained the pitch, the quality, *timbre*, and resonance of tones, and showed how they were produced; that ripples are produced in the air by different sounds, each sound causing a combination of wavelets the curves of which can be made visible to the eye and many of which are of exceeding beauty. These were exhibited to the audience by means of a gas jet, whose vibrations were reflected in a mirror."

Photographs of these beautiful transcriptions of human speech were exhibited by Dr. Blake at a meeting of the Otological Society, held early in August, 1874, and there attracted much attention. But while rich in scientific interest, they proved of no direct value for the purpose designed, that is, to aid deaf children in reading speech. But indirectly they proved of great value to the deaf. For, as Graham Bell said: "It was by the study of the shapes and forms of these vibrations that I was led by the different steps to the invention of the telephone." And it was this latter experiment that did lead directly to the invention of the telephone. And later on, deaf children were benefited through having several hundred thousands of dollars received from that invention expended in promoting their welfare; the deaf were also benefited in securing the life services of Graham Bell.

For, while he was studying these beautiful records, and perceiving how easily the drumhead of the ear received and trans-

mitted these voice-vibrations, numberless in variety and characteristics, Graham Bell was forcibly impressed, as he has related, "with the remarkable disproportion in weight between the membrane and the bones that were vibrated by it." Thus he thought, "that if a membrane as thin as tissue paper could control the vibrations of bones that were, compared to it, of immense size and weight, why should not a larger and thicker membrane be able to vibrate a piece of iron in front of an electromagnet, in which case the complication of steel rods shown in my earlier form of telephone could be done away with, and a simple piece of iron attached to a membrane be placed at either end of the telegraph circuit."

Graham Bell rapidly perfected this theory and in October, 1874, explained these views to Dr. Blake at his office in the Hotel Berkeley as well as his belief that "by means of this arrangement undulations should be produced in an electric current corresponding to the undulations of the air produced by the human voice," and prepared sketches to illustrate his explanation of what Dr. Blake called this "absorbing idea of the transmission of human speech." Fortunately these sketches were preserved by Dr. Blake.

Early in 1874, while attending a course of public lectures on acoustics given by Dr. Charles R. Cross, professor of physics in the Massachusetts Institute of Technology, Graham Bell formed an acquaintance with Professor Cross. In the autumn of 1874, Graham Bell showed certain of his experiments to Dr. Cross and explained to him his conception of the feasibility of the transmission of speech. There was a portion of a Reis telephone in the Institute which was shown to Graham Bell, but he explained how he proposed to use a continuous and not a make-and-break current. As soon as Dr. Cross understood that the plan was to transmit speech by varying the current strength or flow by the power of the human voice, he perceived that this "undulating current method was theoretically perfect, and, therefore, in theory adequate to the transmission of speech." Yet he then believed that the electrical effect produced by the vibration of a diaphragm-armature actuated only by the human voice "would be entirely too small to accomplish the desired end." In October, 1874, Graham Bell also described this proposed method of speech transmission to Mr. Hubbard, Mr. Sanders, Moses G. Farmer, Professor Lovering, and others. Mr. George A. Hamil-

ton, Mr. Farmer's assistant, in referring in 1905 to this period, wrote: "At this time, too, Graham Bell began his preliminary experiments, which later gave us the speaking-telephone. I was an enthusiastic participant in some of these, and recall with interest now the fatherly caution then received, not to allow myself to be unduly carried away by some of his theories."

On February 20, 1877, Prof. Charles Robert Cross said: "Three years ago this winter I gave a course of lectures on sound at the Institute. At the last of those lectures in March, I had a long talk with Professor Bell. He didn't introduce himself to me by name then, but he asked this question regarding a piece of apparatus that I discussed: 'Is there any difficulty in keeping a number of tuning-forks in sympathetic vibration by means of a single fork giving the fundamental, of which they are the harmonics?' I told him there was none which I had ever met in practice or of which I had knowledge, also mentioning certain practical difficulties in using the instrument in question. Some weeks after that Professor Bell gave a lecture before the Society of Arts upon the instruction of deaf-mutes. I had some conversation with him after this lecture and made an engagement with him to examine some of our acoustic apparatus. Shortly after this he came to the Institute in company with Miss Locke, and examined a number of pieces of apparatus, especially the phonautograph, upon which one of our students was pursuing special investigations. During the succeeding weeks of the spring we met each other at the Institute very frequently, being interested in certain scientific investigations in acoustics. . . . Late in the autumn of the (next) year, if I recollect rightly, I called upon Mr. Bell at his workshop, and witnessed the transmission of sounds by means of a peculiar receiver constructed of a steel spring. He showed me several other instruments for the same purpose at the same time. At that time Mr. D. B. Hagar, principal of the State Normal School at Salem, was also present. A receiving instrument was also used, embodying the principle used in Reis' telephone, which principle, as I understood Professor Bell, he had rediscovered, he not being at that time familiar with Reis' experiments. These devices used intermittent currents."

On November 26, 1874, Graham Bell wrote: "Mr. Blake (father of Dr. Clarence J. Blake) having kindly offered me the use of a room in his building, No. 77 Kilby Street, Boston, I, this morning, proceeded to set up there the apparatus constructed for me by Mr. Hamilton."

Incidentally it is worthy of note that in these experiments Graham Bell accomplished all that the editor of the *Detroit Post* anticipated in 1870, when he wrote: "If human ingenuity ever hits upon a device for taking instantaneous pictures of sound we may expect some curious results. Instead of verbal descriptions, which flattery and malice too often make untrustworthy, we shall have operatic pictures in which the quality of every tone will be indicated as accurately as though it had been measured with a tape line."

CHAPTER XXIII.

In the Days of His Youth.

Often has the question arisen: How came Alexander Graham Bell to possess the unusual knowledge so essential in comprehending the component elements entering into the problem of speech transmission; and under what circumstances did he evolve his masterly conception of controlling and varying the strength or flow of the electric current by speech, and making that current the vehicle for the transmission of the form or quality as well as the pitch and strength of the spoken words?

While assisting his father in perfecting his system of Visible Speech, Graham Bell, as he was then called, learned much about vocal physiology and the science of speech. He knew that when vocal sounds are whispered, each vowel seems to possess a particular pitch of its own, and that by whispering certain vowel sounds in rapid succession a resemblance to a musical scale is perceptible. To determine the exact pitch of each vowel he vibrated a tuning-fork in front of or as close as possible to the opening of the air-chamber which lies behind the upper teeth, while his father observed and noted the position of the vocal organs, the shape of the mouth, and the pitch of the vowel. But in uttering certain vowel sounds, the use of the tuning-fork did not permit of complete observation, so these tones were secured by "placing the mouth in the required positions and then tapping against a finger placed just in front of the upper teeth, for the higher resonance, and placed against the neck, just above the larynx, for the lower."

During these experiments Graham Bell noticed that in sounding certain vowels certain tuning-forks seemed more responsive, the other forks not being affected. This led him to

wonder whether by sounding the vowel-vibrations of the voice against one fork, a second fork of the same pitch placed a short distance away would take up and sympathetically reproduce the same tones. While he did not succeed in doing all that he desired, he became so elated over the subject, that in 1867, he wrote to Mr. Alexander J. Ellis, president of the London Philological Society, and a leading authority in all matters relating to speech, and gave a detailed description of the results of the experiments. Mr. Ellis, who was then engaged on his admirable translation of Helmholtz's great work "On the Sensations of Tone," replied that experiments similiar to Graham Bell's had already been made and explained by Helmholtz, and in a much more perfect manner. Moreover, that "Helmholtz had not only analyzed the vowel sounds into their constituent musical elements, but had actually performed the synthesis of them, producing, artificially, certain of the vowel sounds through combining musical tones by causing a harmonic series of tuning-forks of different pitch to vibrate simultaneously by means of an electric current passing through a series of electromagnets between the poles of which these specially prepared tuning-forks were placed; while above each fork a resonater was arranged to reinforce the sound."

Nevertheless, Mr. Ellis found some of the results detailed in the letter of so interesting a character, that he arranged for a discussion of the subject at his home in London, and it was during "a delightful visit" there that Graham Bell repeated his experiments, while Mr. Ellis spent a whole day translating passages for him from the German work of Helmholtz. At that time Graham Bell's knowledge of electricity was too slight to enable him to fully understand all the explanations given, but they were of so interesting a character that he speedily obtained a copy of Helmholtz's work and attempted to repeat some of the electrical experiments. He did this, not only because of the fascinating character of the subject, but because he felt that it was his duty as a student of speech to master all the researches of others that bore upon what was to be his professional study, and, therefore, he should investigate speech along the lines described by Helmholtz. In turn these experiments led to the study of electricity, and of certain systems of telegraphy. Then he became greatly interested in the simplicity of the Morse method of reading by sound, and while teaching in Bath, England, in 1867, he had a telegraph wire connecting his room with that of a friend, and experimented in sending messages.

During the years 1867-1870, Graham Bell made a number of electrical devices "based upon Helmholtz's vowel apparatus," and spent much time in producing "an instrument for making and breaking a voltaic circuit with extreme rapidity to take the place of the transmitting tuning-fork used in Helmholtz's researches." In 1869 he realized that it was possible, by the employment of vibrating armatures, having definite rates of vibration, to distinguish between signals sent simultaneously along the same line.

In 1874, Graham Bell stated that "the idea of a multiple telegraph suggested itself to me from the consideration of certain acoustical phenomena. If we press down the pedal of a piano and sing a note, the sound waves, striking against the strings of the instrument, cause that one to resound which corresponds in pitch to the last note sung. If an electro-magnet is placed over each string, and all the magnets are united in one circuit, a series of electrical impulses, corresponding in number and regularity to the sounding-waves existing in the air, passed along the wire will cause a similarly regular intermittent attraction to appear at the magnets, and *that string whose rate of vibration is the same will resound.*

"In the one instance all the strings receive a definite number of *pushes* per second from the air; in the other, a definite number of *pulls* per second from the magnets.

"As the effect of pulling a string on one side is exactly equivalent to pushing it from the other, it is evident that whatever phenomena result from the action of aërial pulses upon the strings, must also ensue from attractive impulses from the magnets. However many notes are sung simultaneously into the piano, each system of sound-waves affects its corresponding string as readily as if the other systems had no existence. Hence, however many different series of regular intermittent attractions appear simultaneously at the magnets, each one must affect its corresponding string as though it came alone.

"It was during the year 1869, or previously, that I first realized the idea that it was possible, by the employment of a vibrating armature having definite rates of vibration, to distinguish between signals sent simultaneously along the same circuit."

The French translation of Helmholtz's book was secured by Graham Bell early in 1870, and, being familiar with the language, he devoted many hours to a study of the volume. Through a

thorough investigation of the apparatus by which Helmholtz succeeded in imitating vowel sounds, Graham Bell secured his "first ideas of a telegraphic instrument for the transmission of signals possessing the property of pitch."

None of the many experiments carried out during the years 1867-1870, possessed any commercial value. Yet they enriched and broadened Graham Bell's knowledge of the subject and thus were stepping-stones to success. Furthermore, they led him to reason that if Helmholtz had found it possible to transmit vowel sounds and musical notes over a wire, why not transmit consonants? And if it should prove possible to transmit consonants, what was to prevent the electrical transmission of speech? Some one has said that "we utter vowels, we articulate with consonants. If we utter a single vowel sound and interrupt it by a consonant, we get an articulation."

Thus there ran through Graham Bell's mind the thought that it should be possible to devise an instrument that would transmit speech as easily as Helmholtz transmitted vowel sounds and he worked with that end in view. In the beginning he could not formulate a definite plan for accomplishing the transmission of speech electrically, nor during his stay in England did he "form any idea of the details of an apparatus for producing speech in this way." Yet the deeper he delved into the science of electricity, the more rapidly his doubts disappeared, and the more his imagination was stimulated to perceive what marvelous results would be attained by providing means for "talking by telegraph." Not only did he feel confident that the day would come when speech would be transmitted over long distances, but he expressed this belief to his friends. And Dr. Whyte, of Elgin, Scotland, often referred to the manner in which, during the year 1868, "Alex. Bell would chatter away about 'talking by telegraph.'" In 1879, Graham Bell said: "I am sure that I stated to friends in England, before 1870, my belief that we should one day speak by telegraph, but I had no idea that I would ever myself be connected with the realization of such a plan."

CHAPTER XXIV.

Evolving the Theory of Speech Transmission.

During the years 1871-1873, Graham Bell devoted what time he could spare from his professional duties "to practical experiments relating to the production of sound by electrical means, with the object of reducing to practice his system of harmonic telegraphy," by which he expected to be able to send a number of signals both ways at the same time over the same wire. These experiments could only be carried on at night, and often late at night, for every moment from morn till eve was fully occupied with professional work, teaching, examinations, lectures, etc. During this period he devised several forms of telegraphic apparatus, and completed a telegraph system in which two or more current interruptors and harmonic receivers were connected on a single circuit. When sending a message, by depressing the key at the transmitter the current would cause the corresponding reed at the receiving end to reproduce the given musical tone, all the other reeds remaining silent. To aid him in making these experiments he strung a telegraph wire from his residence to the house of his friend, D. P. Richards, who resided across the street.

These many experiments relating to sound transmission were all more or less serviceable in broadening his knowledge of that branch of electricity. But from the sending of many signals over one wire at the same time by a make-and-break circuit, the electric-speaking telephone would never have been evolved, though these experiments had been continued along the same line for a lifetime; for conversation cannot be transmitted on an interrupted, or make-and-break, circuit. Laughter, whistling, singing, certain vowel sounds, and even an occasional word emphatically expressed, may be transmitted with an instrument using a make-and-break circuit. But for the intelligible transmission of speech the current must be continuous, yet vary in strength or flow as varies the force of the sound waves impinging on the diaphragm of the transmitter; otherwise the diaphragm in the receiver will not be under the constant control of the speaker; unless under the constant control it cannot copy or reproduce the movements of the diaphragm in the transmitter. And only through a substantial reproduction in the receiver of the movements in the transmitter is intelligible conversation secured. These facts are now well known; but they were first conceived by Alexander Graham Bell,

and first promulgated by him, as will be shown later on. Now we are interested in showing how at first he was simply following the same delusive idea that Bourseul turned loose in 1854, that an interrupted current would convey speech, a fallacy that misled Reis. As Judge Lowell so explicitly said of the Reis telephone: "The regret of all its admirers was that articulate speech could not be sent and received by it. The deficiency was inherent in the principle of the machine. A century of Reis would never have produced a speaking telephone by mere improvement in construction."

In May, 1873, a serious illness, brought on by overwork and too close application to his experiments, compelled Graham Bell to drop everything and return to his father's home, where he remained until October of that year. Then he returned to Boston and again plunged into both his professional work and his fascinating electrical experiments, and so continued during the next fifteen months.

Throughout the year 1874, Graham Bell found every moment of time more fully occupied than ever before. The inestimable value of Visible Speech in educating the deaf was generally recognized; his lectures upon vocal physiology at the Boston University were largely attended, and were carefully prepared; his classes composed exclusively of the teachers sent by the various institutions to receive instruction upon the subject of teaching articulation to deaf pupils, had increased in size, as had also his classes composed of persons, mostly young women, who were desirous of qualifying themselves to become teachers of articulation in schools for the deaf. Then his lectures on articulation were supplemented by experimental demonstrations with individual deaf pupils, while his lectures on vocal physiology were enriched by practical illustrations of the wiser method of correcting stammering, stuttering, lisping, burring, and other defects in speech, as shown in the cases of private pupils placed in his care. Then, in addition to all these professional duties, Graham Bell had undertaken the general education of a deaf-mute boy, as an interesting experiment.

The experiment with the boy G. S., is worthy of special mention. He came to Graham Bell in October, 1872, when five years of age; was born totally deaf, had never spoken a word, had never been to school, but had received private instruction for three weeks from Miss Sarah Fuller. He remained under Graham Bell's tuition for nearly three years, and acquired "a ver-

nacular knowledge of the English language in its spoken and written forms." Ten years later the "remarkable command of language possessed by this boy" was publicly commented on, as well as the fact that "he used the English language with a freedom and an accuracy quite exceptional in a deaf-mute," although, "for several years past he had had no teacher." In teaching the child Graham Bell held that "we should talk to the deaf child just as we do to the hearing one, with the exception that our words are to be addressed to his eye instead of his ear," and claimed that George Dalgarno (1680) "carries his theory so far as to assert that the deaf infant would as soon come to understand written language as a hearing child does speech, 'had the mother or nurse but as nimble a hand as commonly they have a tongue'." And he proceeded "to blend the principles of Dalgarno with those of Froebel" and familiarized "the child with written language" by giving language lessons "through the instrumentality of toys and games" in a school room converted into a play room.

In view of the extent of Graham Bell's professional labors, it will be easily understood that in the autumn and winter of 1874, his time was completely occupied from morning till night, and that any experiments and researches in multiple-telegraphy, or in his "all-absorbing idea of speech transmission" were necessarily carried on when other people were in bed. It will also be understood that his profession was his only support and that it yielded a fairly good income.

Not only were his experiments conducted late at night, but he was compelled to construct his instruments with his own hands as he was afraid to employ an electrician or mechanician until the invention was properly secured by letters-patent, or otherwise. Then he was not a skilled electrician, and did not carry on his "experiments in the same manner they might have been carried on by one more familiar with electrical subjects." Thus many of his experiments were in the nature of research for the sake of information.

Graham Bell said: "For economy's sake, when I wished to construct a new form of apparatus, I took other instruments to pieces and used the materials in the manufacture of the improvement. This will account for the disappearance of many of the earlier forms of instruments. From November, 1873, until the close of the year, I continued experiments with various forms of apparatus, but constructed no new forms, as I was convinced that with the limited time and means at my disposal and with my own

rude workmanship, I could not hope to obtain any better results than I had already done, and that it would pay me better to devote the little time I could spare from my professional duties to the theoretical development of the invention, than to waste my efforts in mechanical work."

Again he said: "All the apparatus, which was constructed between October, 1872, and November, 1873, were made for the purpose of testing my invention of multiple telegraphy, with results that demonstrated one fundamental principle of the invention, that the receiving instrument would not be thrown into vibration to produce its fundamental note, unless it was in unison with the transmitting instrument employed. My experiments from October, 1872, till November, 1873, were chiefly confined to making a transmitting instrument that would vibrate with sufficient regularity to enable me to test my theory of transmitting two or more musical notes along a single circuit. It was not until November, 1873, that I was enabled to perform the experiment successfully. In the winter of 1873-74, at 292 Essex street, Salem, I constructed an experimental line between my place of residence and a barn in the neighborhood, and placed in the barn a small organ containing twelve organ reeds. I employed a man to operate the instrument in the barn, while I noted the effect in my study. I did not have receivers tuned to all these different pitches, but upon placing my ear against the armatures of the receiving instruments employed I could hear the various tones of the chords which the man struck, thus proving that notes of different pitch had been simultaneously transmitted along the same circuit."

In 1874, George S. Hutchings, an organ builder of Cambridgeport, made a miniature seven-reed pipe organ, "combining bellows, wind-chest, and keys with an electrical apparatus and the necessary telegraphic wires," for Graham Bell, in order that he might transmit messages by musical sounds. The first experiments were made in the Williams factory, and then the organ was placed, Mr. Hutchings says, "in the barn at Salem, some three hundred feet distant from the house. The wire was led from the house to the barn. Prof. Bell operated the apparatus in the house, causing the pipes to sound in the barn where I was stationed. I should say he operated the apparatus in the house while I operated that in the barn. I caused the pipes to sound both singly and in combination, while he took notes of the separate tones and those in combination, I making memoranda at the same time,

after which we compared notes, and, to my surprise, they exactly coincided. Prof. Bell stated that he had a resistance equivalent to the distance from Boston to Salem."

Notwithstanding this physical and mental strain, there entered into Graham Bell's life that rare and inexpressible pleasure ever the accompaniment of unselfish labor of love. He found a joy in striving to benefit helpless humanity. If his telegraph and telephone inventions proved to be all that he expected, "we shall have Visible Speech put before the world in a more permanent form," he wrote to his parents. And all through these years of toil and trial, under discouraging conditions, the one thought that appears to have dwelt uppermost in his mind was that the success of his inventions would afford greater opportunities for the exercise of helpfulness to humanity. If wealth came it would not be used in securing selfish pleasure, nor in idleness, for he could not live a life of ease, he would not be a Toledo blade and remain sheathed in a rusting scabbard. His letters to parents and friends are permeated with this desire to help the helpless. Writing to his parents at midnight on October 20, 1874, while on the train running from Boston to Salem, he wrote:

"I am tonight a happy man. Success seems to meet me on every hand. First, pupils pour in.... Second, the medical society has evinced great interest in the ear experiments. Several physicians express the belief that certain vexed questions concerning the mode in which the vibrations of sound are transmitted from the tympanic membrane to the inner ear can be settled, and I was requested to repeat the experiments (see Chapter XXII) upon a fresh specimen using an organ pipe as a generator of sound and affixing the stylus to various portions of the ear that they designated.... I am hard at work on a lecture to be delivered in the Institute of Technology next Wednesday. Subject: 'The Education of the Deaf.' This is to be a free public lecture, and it will be illustrated by an exhibition of pupils of the Boston school. The intention is to excite an interest in the public mind, and having got a large audience together by the prospect of hearing deaf-mutes talk, to call for subscriptions to be devoted to the immediate opening of an evening school for adults."

Then he told of having taken the oath of intention to become an American citizen and of preparing the papers covering his multiple telegraph, and added: "Should I be able to make any money out of the idea, we shall have Visible Speech put before the world in a more permanent form than at present."

SPECIAL REPORT UPON THE DEAF, BASED ON THE RETURNS OF THE TWELFTH CENSUS.[1]

PREPARED BY ALEXANDER GRAHAM BELL, AS EXPERT SPECIAL AGENT OF THE CENSUS OFFICE.

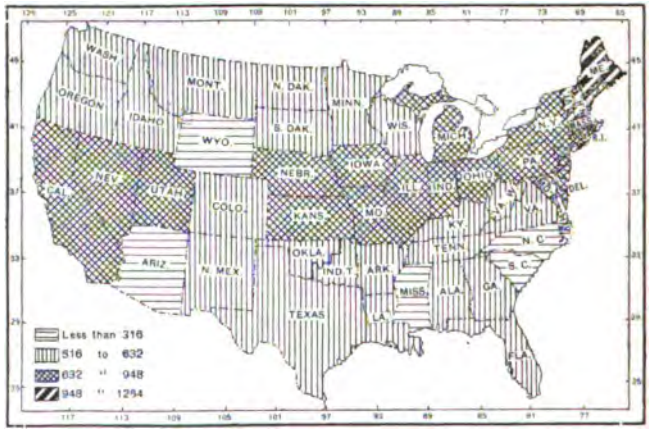
(*Continued from Vol.* IX, *No.* 5.)

Table XLI[2] gives the ratio per million of total population for certain classes of deaf shown in Tables XXXIX[2] and XL.

Table XLI is illustrated by the series of shaded maps constituting Maps 4 to 9, inclusive, showing the ratio per million of population in each State and Territory reported as deaf from the specified causes.

In 47,967 cases the assigned causes of deafness have been classified by their effect upon the ear, and Map 4 shows approximately the proportion of the population in each State or Territory who lost hearing from the classified causes.

MAP 4.—*Number of deaf from classified causes per million of population, by States and Territories.*



Four grades of shading are employed: The second indicates a proportion double that shown by the first; the third, three times that proportion, and the fourth, four times—at least approximately. The

[1] A reprint of "Special Reports: the Blind and the Deaf," in the part relating to the Deaf; issued by the Department of Commerce and Labor, Bureau of the Census, Washington, 1906. Commenced in the October, 1906, number of the REVIEW.

[2] Omitted from this republication.

largest proportion deaf from the classified causes, indicated by the fourth or heaviest shading, is found in the territory covered by Maine, New Hampshire, and Vermont. The territory covered by the third grade of shading abuts upon this and extends westward as a narrow tongue as far as Nebraska and Kansas, including these States. The next, or second, shading extends pretty uniformly over the rest of the country (excluding the Western division) except in the States of North Carolina, South Carolina and Mississippi. The States composing the Western division with the exception of California, have very small populations, so that the ratios deaf have not the same significance as in the case of the older and more thickly settled States, since the addition or substraction of a mere handful of deaf would make an appreciable change in the ratios.

Broad groups.—It appears that the States having the largest ratios deaf from affections of the middle ear compose a territory covering the New England States and the States bordering on the Great Lakes (New York, Ohio, and Michigan), with an outlying territory in Iowa. The largest ratios of all are found in Maine, New Hampshire and Vermont, and the smallest in the Southern States.

The largest ratios deaf from affections of the internal ear are found in a territory covering the North Central division of the United States (except Minnesota, North Dakota, South Dakota, and Nebraska), with outlying extensions in New York, Maryland, Kentucky, and Arkansas. The largest ratio of all is found in Indiana, and the smallest, if Arizona be disregarded, in South Carolina.

Subgroups.—Maps 5 and 6 show, in contrast, the geographic distribution of the deaf who lost hearing from suppurative and non-suppurative (or catarrhal) affections of the middle ear, and Maps 7 and 8 relate to deafness caused by affections of the labyrinth and auditory nerve.

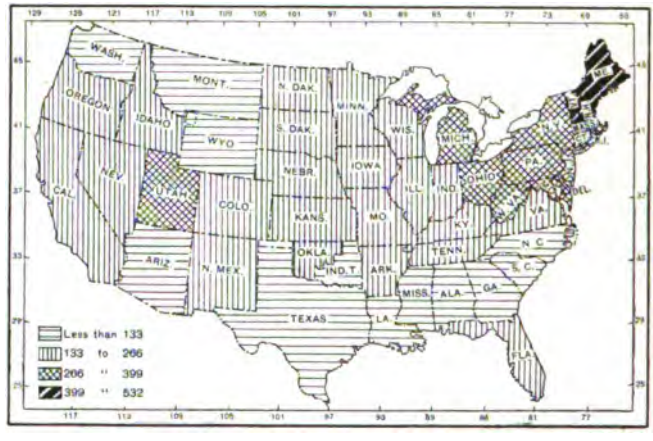
Principal assigned causes.—Map 9 shows the geographic distribution of the congenital (unclassified) deaf.

The larger ratios, congenitally deaf, prevail over the greater portion of the country (excluding the Western division); and the largest ratios are found in a group of States comprising Kentucky, Tennessee, Virginia, and North Carolina, with a detached area in Maine. The largest ratio of all is found in North Carolina.

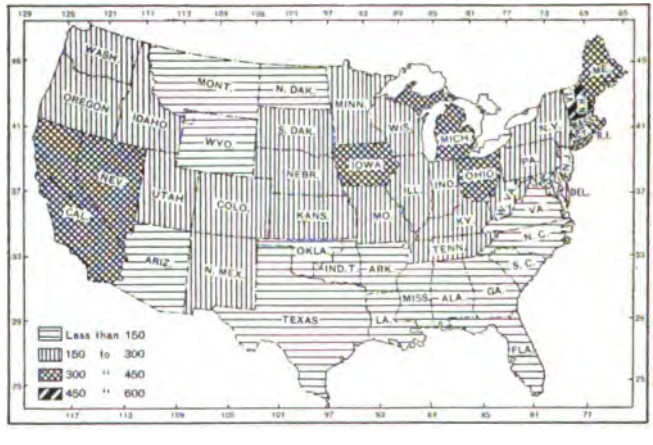
Map 10 shows the average percentage of sunshine in the States and Territories during a period of 31 years (1870 to 1901), from records compiled by the United States Weather Bureau, under the direction of Prof. Willis L. Moore.

It is noteworthy that the area of country having the least percentage of sunshine corresponds very closely to the area showing the largest ratios deaf from affections of the middle ear. We would naturally expect that a cold, damp climate would favor the production of catarrhal affections of the middle ear (Map 6), but the

MAP 5.—*Number of deaf from suppurative affections of middle ear per million of population, by States and Territories.*



MAP 6.—*Number of deaf from catarrhal affections of middle ear per million of population, by States and Territories.*



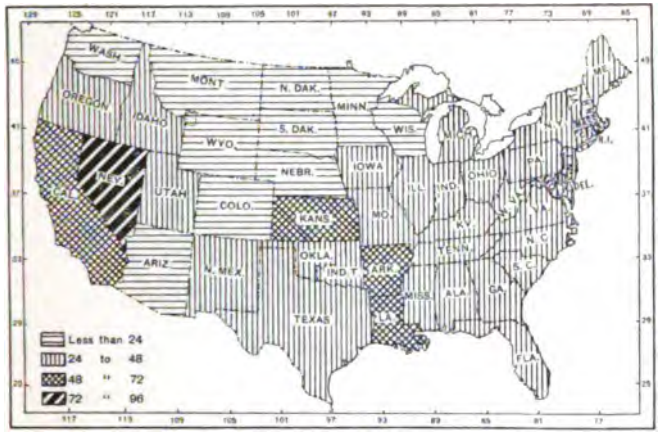
sunshine map corresponds more closely with the map showing the geographic distribution of affections of the suppurative variety (Map 5) caused principally by scarlet fever.

Maps 11 and 12 relate to the geographic distribution of the totally deaf from early childhood (under 5), all of whom naturally are

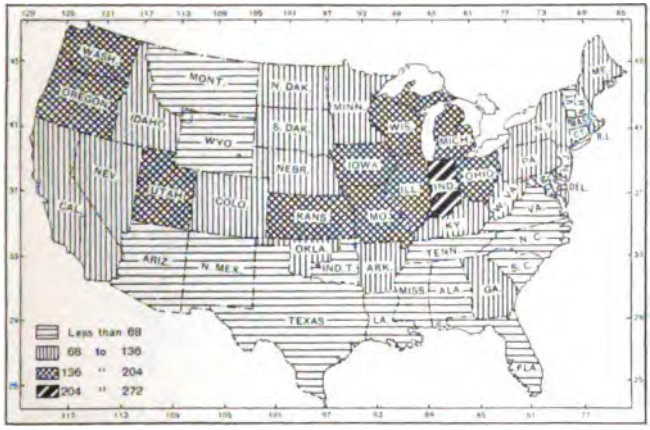
deaf and dumb, distinguishing the congenital cases (Map 11) from the noncongenital (Map 12).

Table XLII shows the deaf from the specified causes, by the age and period of life when deafness occurred.

MAP 7.—*Number of deaf from affections of the labyrinth per million of population, by States and Territories.*



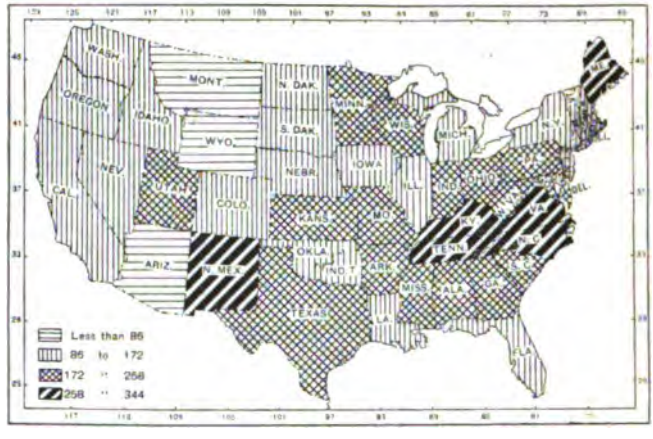
MAP 8.—*Number of deaf from affections of the auditory nerve per million of population, by States and Territories.*



It will be seen from Table XLII that the number deaf from childhood exceeds the number deaf from adult life in each of the three broad groups—external ear, middle ear, and internal ear. This predominance is especially marked where deafness resulted from affections of the internal ear.

The deaf from childhood predominate among those deaf from suppurative affections of the middle ear and affections of the auditory nerve, and the deaf from adult life predominate in the case of non-

MAP 9.—*Number of congenital deaf per million of population, by States and Territories.*



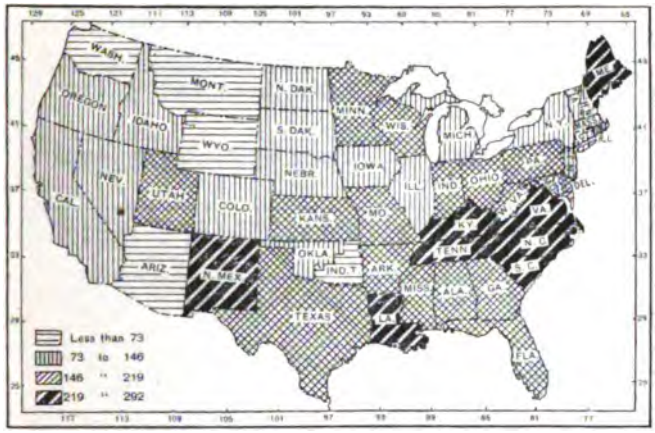
MAP 10.—*Per cent of sunshine in each State and territory, 1870 to 1891, inclusive.*

suppurative affections of the middle ear and affections of the labyrinth.

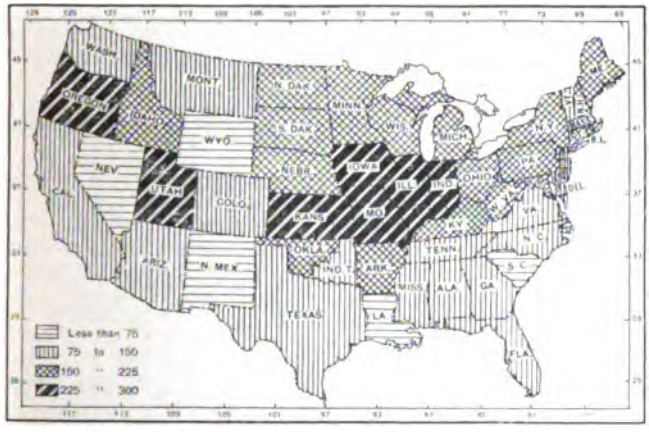
In Diagram 35 the principal assigned causes are considered in connection with the period of life when deafness occurred.

From Diagram 35 it is clearly seen that the predominant causes of deafness are different in the case of the deaf from childhood and the deaf from adult life. Scarlet fever, meningitis, and brain fever, which are among the leading causes of deafness occurring in child-

MAP 11.—*Number of totally deaf from birth (congenital) per million of population, by States and Territories.*



MAP 12.—*Number of totally deaf from early childhood, under 5 (noncongenital) per million of population, by States and Territories.*

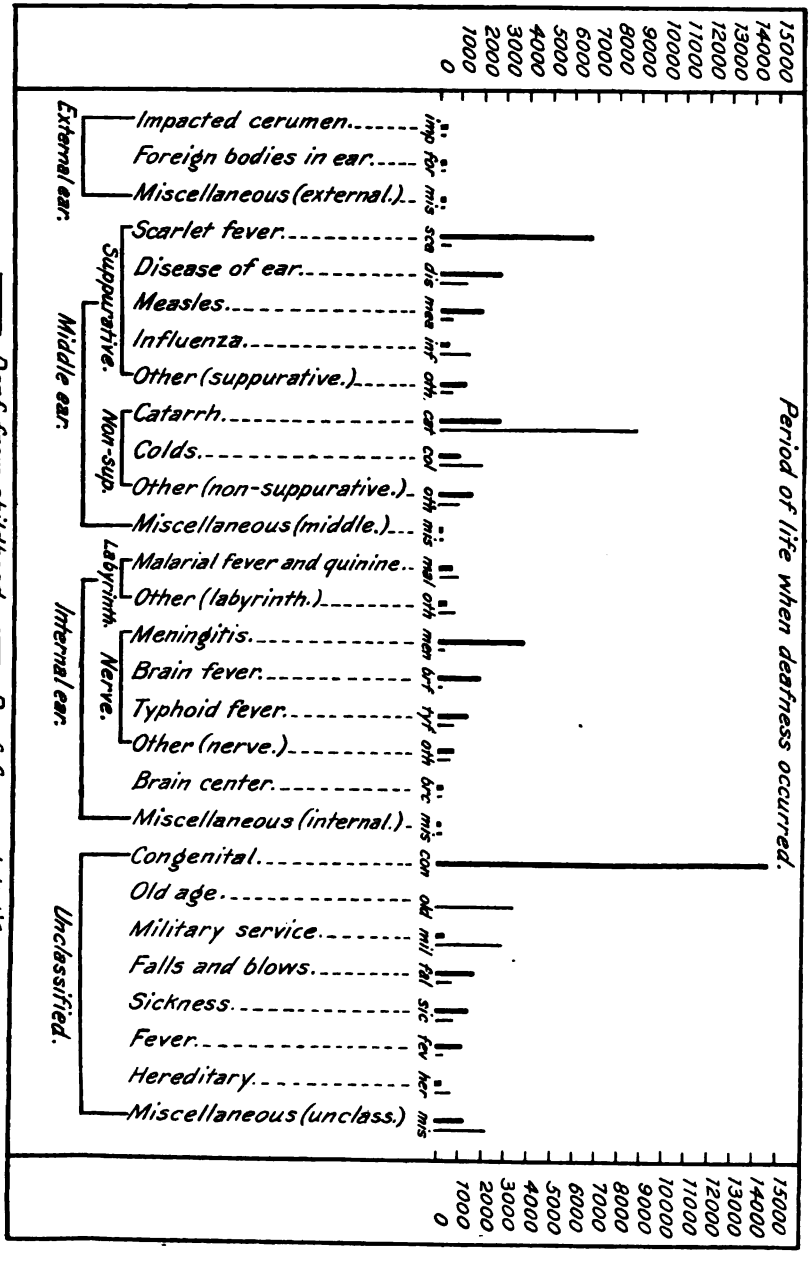


hood, are comparatively insignificant as causes of deafness occurring in adult life. On the other hand, catarrh, colds, and influenza, which are the leading causes of deafness occurring in adult life, are of lesser importance as causes of deafness in childhood. Catarrh is

TABLE XLII.—*The Deaf, by Period of Life and Age When Deafness Occurred and Causes of Deafness.*

CAUSE OF DEAFNESS.	Total.	PERIOD OF LIFE WHEN DEAFNESS OCCURRED.			AGE WHEN DEAFNESS OCCURRED.											
					Under 20.							20 and over.				
		Childhood (under 20).	Adult life (20 and over).	Unknown	Birth.	After birth, under 2.	2 and under 5.	5 and under 10.	10 and under 15.	15 and under 20.	Not stated.	20 and under 40.	40 and under 60.	60 and under 80.	80 and over.	Not stated.
All causes	89,287	50,296	35,924	3,067	14,474	7,396	10,536	7,018	4,464	4,061	2,347	16,588	9,437	6,595	1,021	2,283
Classified	47,067	27,514	19,437	1,016	....	5,748	8,397	5,756	3,459	2,870	1,284	10,242	5,577	2,881	205	532
Unclassified	31,205	20,033	10,838	334	14,474	1,301	1,579	888	623	818	350	4,501	1,931	2,391	723	1,292
Unknown	10,115	2,749	5,649	1,717	....	347	560	374	382	373	713	1,845	1,929	1,323	93	459
Classified:																
External ear	871	484	364	23	.....	73	89	93	111	96	22	185	110	54	1	14
Impacted cerumen	357	200	147	10	.....	10	17	32	68	65	8	89	34	17	.....	7
Foreign bodies in ear	297	149	142	6	.....	15	34	40	25	27	8	69	55	15	.....	3
Miscellaneous (external ear)	217	135	75	7	.....	48	38	21	18	4	6	27	21	22	1	4
Middle ear	34,801	18,705	15,787	809	.....	3,479	5,204	3,798	2,496	2,159	1,069	8,229	4,534	2,405	171	448
Suppurative	17,533	13,054	4,159	320	.....	2,632	4,289	3,045	1,490	872	726	2,072	1,107	791	81	108
Scarlet fever	7,424	6,851	454	119	....	928	2,633	2,017	719	249	305	344	74	13	.....	23
Disease of ear	4,210	2,834	1,278	98	.....	864	724	388	334	241	283	666	373	183	19	37
Measles	2,469	1,925	511	33	.....	424	508	405	279	234	75	412	76	10	1	12
Influenza	1,776	388	1,344	44	.....	116	91	74	51	41	15	320	413	525	57	29
Other (suppurative)	1,654	1,056	572	26	.....	300	333	161	107	107	48	330	171	60	4	7
Nonsuppurative	17,260	5,149	11,623	488	.....	847	914	753	1,006	1,287	342	6,156	3,424	1,614	90	339
Catarrh	11,702	2,718	8,646	338	.....	234	308	404	676	899	197	4,668	2,515	1,149	60	254
Colds	3,074	984	1,989	101	.....	181	195	123	176	240	69	990	588	337	21	53
Other (nonsuppurative)	2,484	1,447	988	49	.....	432	411	226	154	148	76	498	321	128	9	32
Miscellaneous (middle ear)	8	2	5	1	.....	.....	1	.....	.....	.....	1	1	3	.....	.....	1
Internal ear	12,295	8,825	3,286	184	.....	2,196	3,104	1,865	852	615	193	1,828	933	422	33	70
Labyrinth	2,726	971	1,669	86	.....	154	232	172	171	201	41	881	514	226	11	37
Malarial fever and quinine	1,636	665	944	27	.....	133	174	102	103	124	29	530	281	113	8	12
Other (labyrinth)	1,090	306	725	59	.....	21	58	70	68	77	12	351	233	113	3	25
Nerve	9,361	7,712	1,567	82	.....	1,989	2,830	1,679	672	405	137	926	404	187	19	31
Meningitis	3,991	3,868	106	17	.....	958	1,566	848	317	120	59	86	16	3	.....	1
Brain fever	2,013	1,933	69	11	.....	609	723	402	127	50	22	48	18	2	1	.....
Typhoid fever	2,055	1,211	823	21	.....	129	327	340	192	199	24	600	172	43	1	7
Other (nerve)	1,302	700	569	33	.....	293	214	89	36	36	32	192	198	139	17	23
Brain center for hearing	129	111	13	5	.....	45	33	12	5	5	11	6	3	2	.....	2
Miscellaneous (internal ear)	79	31	37	11	.....	8	9	2	4	4	4	15	12	7	3	.....
Unclassified:																
Congenital	14,472	14,472	.....	.....	14,472	....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
Old age	3,361	.....	3,361	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,646	684	1,031
Military service	3,242	292	2,864	86	.....	.....	.....	.....	11	280	1	2,172	482	76	3	131
Falls and blows	2,243	1,528	671	44	.....	373	472	277	188	126	92	326	211	111	6	17
Sickness	2,143	1,339	715	89	.....	349	463	265	109	76	137	308	226	144	11	26
Fever	1,436	1,050	363	23	.....	257	356	194	113	90	40	209	107	35	4	8
Hereditary	909	209	676	24	.....	3	13	29	55	85	24	325	229	76	2	44
Miscellaneous (unclassified)	3,399	1,143	2,188	68	2	319	275	183	147	161	56	1,161	676	303	13	35

DIAGRAM 35.


0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
Period of life when deafness occurred.
External ear.
Impacted cerumen. imp
Foreign bodies in ear. for
Miscellaneous (external.) mis
Middle ear.
Suppurative.
Scarlet fever. sca
Disease of ear. dis
Measles. mea
Influenza. inf.
Other (suppurative.) oth.
Non-sup.
Catarrh. cat
Colds. col
Other (non-suppurative.) oth
Miscellaneous (middle.) mis
Internal ear.
Labyrinth.
Malarial fever and quinine mal
Other (labyrinth.) oth
Nerve.
Meningitis. men
Brain fever. brf
Typhoid fever. typ
Other (nerve.) oth
Brain center. brc
Miscellaneous (internal.) mis
Unclassified.
Congenital. con
Old age old
Military service mil
Falls and blows fal
Sickness sic
Fever fev
Hereditary her
Miscellaneous (unclass.) mis
Deaf from childhood.
Deaf from adult life.

reported as the cause (of deafness) in over 35 per cent (35.1) of the assigned causes of deafness occurring in adult life. Among the unclassified causes it is somewhat noteworthy that most of the "hereditary" cases lost hearing in adult life, and that none of them were born deaf.

The difference between the deaf from childhood and the deaf from adult life may be illustrated by giving in each case the principal assigned causes among the classified cases, in the order of their importance, as follows:

Deaf from childhood:	
Scarlet fever	6,851
Meningitis and brain fever	5,801
Catarrh and colds	3,702
Disease of ear	2,834
Measles	1,925
Typhoid fever	1,211
Malarial fever and quinine	665
Influenza	388
Deaf from adult life:	
Catarrh and colds	10,635
Influenza	1,344
Disease of ear	1,278
Malarial fever and quinine	944
Typhoid fever	823
Measles	511
Scarlet fever	454
Meningitis and brain fever	175

In diagram 36 the principal assigned causes are considered in connection with the age when deafness occurred.

Under 2.—The congenitally deaf form the mass of those who lost hearing before the age of 2, and among the noncongenital cases scarlet fever, disease of ear, measles, meningitis, and brain fever seem to predominate slightly over the other causes assigned.

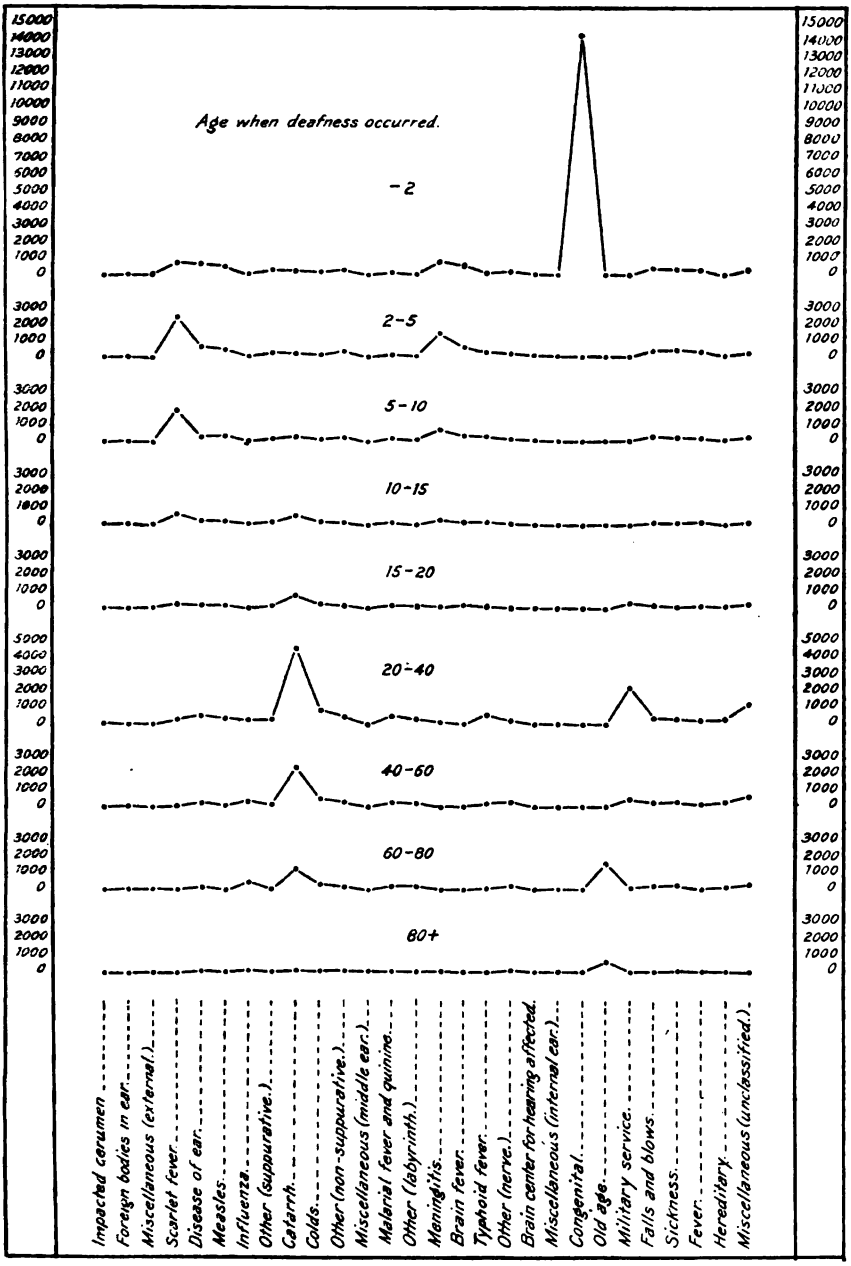
2 and under 5.—Scarlet fever and meningitis stand out prominently as causes of deafness occurring at this period. Disease of the ear and brain fever are next in importance. It is interesting to note that over 65 per cent of the cases due to brain fever occur before the age of 5.

5 and under 10.—Where deafness occurred between 5 and 10 years of age, scarlet fever is markedly the leading cause, and meningitis only slightly predominates over the other causes.

10 and under 15.—No single cause seems to be predominant in a marked degree. Scarlet fever and catarrh are slightly conspicuous. Meningitis is less conspicuous than in the preceding groups.

15 and under 20.—Catarrh now takes the lead, but only slightly,

DIAGRAM 36.


Age when deafness occurred.
-2
2-5
5-10
10-15
15-20
20-40
40-60
60-80
80+
Impacted cerumen
Foreign bodies in ear
Miscellaneous (external)
Scarlet fever
Disease of ear
Measles
Influenza
Other (suppurative)
Catarrh
Colds
Other (non-suppurative)
Miscellaneous (middle ear)
Malarial fever and quinine
Other (labyrinth)
Meningitis
Brain fever
Typhoid fever
Other (nerve)
Brain center for hearing affected
Miscellaneous (internal ear)
Congenital
Old age
Military service
Falls and blows
Sickness
Fever
Hereditary
Miscellaneous (unclassified)

and scarlet fever and meningitis no longer appear as conspicuous causes.

20 and under 40.—Deafness occurring in adult life between the ages of 20 and 40 seems to be due chiefly to catarrh. A considerable number, however, report deafness as caused by military service. Malarial fever and quinine, and typhoid fever, which are also slightly conspicuous, are more prominent at this period than at any other.

40 and under 60.—The only conspicuous cause is catarrh, but it is less conspicuous than in the preceding age period.

60 and under 80.—Deafness occurring between the ages of 60 and 80 is chiefly recorded as due to old age, although catarrh still shows conspicuously, but in a much less marked degree than in the two preceding age periods.

80 and over.—The only conspicuous cause assigned for deafness occurring at this period is old age. Two-thirds of the cases occurring after 80 years of age are due to this cause.

In relation to the four principal assigned causes of deafness it may be noted that congenital deafness occurs exclusively at birth, and deafness due to catarrh almost exclusively in adult life. Meningitis produces deafness chiefly before the age of 5 and scarlet fever before the age of 10.

Table XLIII shows the percentage deaf from childhood and from adult life for each of the principal assigned causes.

From Table XLIII it is seen that in affections of the middle ear the proportion deaf from adult life more nearly approaches the proportion deaf from childhood than in either of the other two broad groups, although the proportions in the several causes under affections of the middle ear vary greatly. The proportion deaf from childhood is largest in affections of the internal ear, being over 70 per cent of the total number of such cases. In only one of the leading causes under this group does the proportion deaf from adult life exceed that of the deaf from childhood, namely, in malarial fever and quinine.

More than 90 per cent of the deafness from scarlet fever, meningitis, and brain fever, more than 75 per cent of the deafness due to measles, and over 65 per cent of the deafness due to disease of the ear occurred in childhood; on the other hand, more than 60 per cent of the deafness from influenza, catarrh, and colds occurred in adult life.

TABLE XLIII.

Per Cent Distribution of the Deaf, by Degree of Deafness, Period of Life When Deafness Occurred, and Principal Causes.

CAUSE.	PER CENT DISTRIBUTION OF THE DEAF BY—				
	Degree of deafness.		Period of life when deafness occurred.		
	Totally deaf.	Partially deaf.	Deaf from childhood.	Deaf from adult life.	Unknown.
All causes	41.9	58.1	56.3	40.2	3.5
Affections of external ear	23.8	76.2	55.6	41.8	2.6
Affections of middle ear	29.4	70.6	52.3	45.4	2.3
Scarlet fever	55.8	44.2	92.3	6.1	1.6
Disease of ear	32.4	67.6	67.3	30.4	2.3
Measles	38.6	61.4	78.0	20.7	1.3
Influenza	15.4	84.6	21.8	75.7	2.5
Catarrh	11.6	88.4	23.2	73.9	2.9
Colds	18.9	81.1	32.0	64.7	3.3
Affections of internal ear	62.9	37.1	71.8	26.7	1.5
Malarial fever and quinine	26.8	73.2	40.6	57.7	1.7
Meningitis	90.4	9.6	96.9	2.7	0.4
Brain fever	86.6	13.4	96.0	3.4	0.6
Typhoid fever	44.2	55.8	58.9	40.1	1.0
Unclassified	54.3	45.7	64.2	34.7	1.1
Congenital	87.1	12.9	100.0	.....	.....
Old age	3.4	96.6	.....	100.0	.....
Military service	11.6	88.4	9.0	88.3	2.7
Falls and blows	46.8	53.2	68.1	29.9	2.0
Sickness	46.8	53.2	62.5	33.4	4.1
Fever	52.8	47.2	73.1	25.3	1.6
Hereditary	13.4	86.6	23.0	74.4	2.6

Among the unclassified cases about 75 per cent of the "hereditary" cases lost hearing in adult life. It is noteworthy that over 70 per cent of the deafness due to fever, over 65 per cent of the cases due to falls and blows, and over 60 per cent of the cases due to sickness occurred in childhood. It is interesting also to note that 9 per cent of the deafness due to military service occurred in childhood (under 20 years).

(*To be continued.*)

A VISIT TO AMERICAN SCHOOLS FOR THE DEAF.[1]

ANDERS HANSEN, NYBORG, DENMARK.

[Below is presented a translation of the report of a visit of inspection of American Schools for the Deaf, made by Prof. Anders Hansen, Assistant Director of the Nyborg, Denmark, School for the Deaf. The visit was made in the spring and summer of 1906, and the report was originally printed in "Nordisk Tidskrift för Döfstumskolan," the official organ of the Danish-Norwegian-Swedish Schools for the Deaf. American teachers, and all others interested in our schools, will be glad to know of Mr. Hansen's impressions, which he gives so fully and in such admirable detail, and the more so from the fact that he comes from a country that is looked upon as one of the most progressive in the line of our work and well in the lead in some of its more important features.—EDITOR REVIEW.]

The education of the deaf in America can celebrate its centennial jubilee in a few years, as the first permanent public school for deaf children was opened in Hartford, Conn., in 1817, with Thomas H. Gallaudet as the principal.

A similar institution was the ensuing year established at New York, and, not long after, a third was erected in Philadelphia, and within shorter or longer intervals one school after another was founded in the various States of the Union.

From what here is said it will be seen that the movement that swept over the civilized world a hundred years ago to bring help to the deaf child ran almost parallel in Europe and America, although some few States of the old world were in advance, and served as a model for the young Republic.

It is a well-known fact that the first method of instruction for the American deaf was after the French pattern, and consequently signs were for a long time dominating in the schools until they afterwards, to a certain extent, became replaced by the manual alphabet and writing. At the present time the Oral method is brought more and more in use from decennium to decennium, a transformation of methods that is partly due to the excellent results produced by that

[1]Translated for the ASSOCIATION REVIEW by the author, from his Report in the Nordisk Tidskrift för Döfstumskolan.

method in some prominent schools and partly to the resolutions of such important conferences as that in Milan in 1880 and in Brussels some years later, which have influenced the minds of the educators of the deaf on both sides of the ocean.

There has been hard fighting between the two opposite methods in America, too, but I believe without creating as much personal ill-feeling among the opponents as has been the case among us. An attempt of far-reaching importance has been made from America to reconcile the controversy of the Manual and the Oral methods and elaborate a Combined expedient that should possess the advantages of both.

The most influential champion for that idea is no doubt Dr. E. M. Gallaudet, the founder and President of the famous college at Washington.

If a chemist intends to produce an alloy out of two elements, he has first to find out whether they will assay, and next under what conditions and proportions. Well, I don't know whether any prominent psychologist ever has investigated the problem of uniting two so different methods, but on the basis of what I have seen—first and foremost in America, but also in Scotland—I doubt somewhat about it. The continual growth of the Oral method contains perhaps the most reliable argument against the superiority of the Combined system.

The first thing that strikes the visitor to deaf schools in America, and that arouses his admiration, is the splendid school buildings, with all their accommodations and conveniences in regard to light and air, and their heating plants, baths, etc., and plenty of space to move in for sport and recreation.

Most part of our deaf schools have also new and quite good premises, but our exigencies of elegance and convenience are absolutely modest. In that part of the school hygiene which depends on large, airy rooms, fine ground for sport, etc., the Americans have advantages.

The medical care for the pupils is quite effective, and I believe it is superior to ours in some respects, which can be of great practical consequence for pedagogical results. I shall, for instance, refer to what has been done by the otologist at the Mt. Airy Institution, Philadelphia. He has constated defective vision in from one-fourth to one-third of all pupils, and ordered glasses in all needy cases. What impaired and unaided eyesight means for children taught after the Oral mehod is known by every teacher. All chil-

dren entering the school are usually examined by an aurist; and, besides these more special examinations, each single child is examined in a more general way several times yearly.

The big schools have their own infirmaries, well equipped with all necessary remedies and appliances, where the sick pupils are cared for by trained nurses. Even some of our provincial infirmaries are conducted under more humble conditions.

The deaf schools are not blind to the importance that lies in the conservation of their pupils' teeth; the larger ones amongst them have a special room for the dentist, who comes once or twice a week not only to pull, but more to fill and cleanse attacked teeth, and give orders how to care for them by systematic treatment.

When in Philadelphia, I saw the measuring and examination of the pupils, which is made twice a year in connection with gymnastics and sports, for the purpose of studying their effect on the physical growth of the children. The material thus obtained is of considerable value, not only scientifically, but also practically, for if anything is going wrong preventive measures will be taken.

All schools assure the sports a prominent place in the curriculum.

It is baseball that is the craze of the American youth. That game is played all over the country with eagerness that in cases approaches to rudeness. Saturday is never used for ordinary school work; the afternoon is generally assigned for sports; it would be against the public feeling to go in for sports on Sunday.

Although each child born is dependent on the diet from the first to the last moment of its existence, a strange confusion as to the most healthy diet still prevails amongst the human race. Until science has proved of what the best diet is made up, the popular opinion holds that bill of fare best that contains plenty of meat, bread, butter, fish, vegetables, fruit, and milk. If that view be correct, the American institutions are a little ahead of us. The food our deaf pupils get, both in the institutions and in the foster homes, is more frugal and especially less daintily served.

Through bacteriological examination of the foodstuffs, some institutions endeavor to prevent diseases being brought into the school. In Philadelphia they even extend that examination to sweets, etc., which can be bought at cost price from the steward of the institution. All over is to be found the most praiseworthy care to protect the children against any ailment.

Herbert Spencer declared that the condition for success in life was to possess physical strength, or, as he puts it, "to be a good ani-

mal." I really believe that American schools have a clearer conception of that very important question, and that they work more conscientiously than we do to solve it.

Another very effective factor for the health of school children is the amount of work we require of them. It is a well known fact that there has prevailed some bitterness of feeling amongst the adult deaf population in Germany against the schools and their former teachers, probably only justified by the strenuous work exacted from little deaf children. Happily no such accusations have been heard in our country, where the adult deaf and his teacher are living on very friendly terms; but, nevertheless, I believe that we are close to the boundary of what we dare demand of our pupils without surpassing the permissible limit and risking similar consequences.

You will very often find pupils of five to six years of age in the American schools, and these are treated as fragile little persons, not having more than some few hours of class work daily, the rest of the time being used for games and regular occupations inside or in the grounds, under proper supervision. But also in the higher grades is the weekly number of recitation hours and lesson hours smaller than with us. The American school youth is unquestionably passing a more comfortable time in the school than is the case in many countries in Europe. If no other witnesses were at hand to this fact, at least the time table would confirm my statement.

It is a most difficult matter to know what is the best means to keep up a high standard of discipline in a school, but I really believe the Americans are nearer the ideal than we are, although I could easily find fault with their system, too.

The American teachers of the deaf, of whom only a mere minority are men, pour out much more motherly love over the souls and hearts of little mischievous pupils than do their colleagues over here. Occasionally I saw children choking back their tears without any other punishment than a mild and heart-warm scolding. Believers in the far shorter and more impressive form of punishment—the spanking—would certainly look down upon such treatment as mere sentimentality. However, love is powerful, and I think it quite possible that it leads to the desired end. I do not want to say that I have been entirely converted to the discarding of corporal punishment in all cases, but I think it should be used with great discernment and care.

The inclination a child may have for bad behavior, carelessness, or bad temper toward classmates is very likely not easily cured by

hard punishment, but mildness, and especially patient exertion of influence on a child, may be a better remedy.

As I here have mentioned, it is not in a few respects that the American school for the deaf has genuine advantages—exterior as well as interior localities, the work required of the pupils, diet, relation between teacher and pupil, etc. When the American deaf child leaves school he will undoubtedly go away with a rich store of good remembrances, for the love wherewith the pupils were surrounded in several schools I visited was both touching and inspiring.

A capital advantage the American school has over ours is, its course of instruction is much longer. Very often the State allows the pupils to stay at school until 21 years of age; thus it is we meet pupils having been 12 to 13 years in school; and what an extension of 4 to 5 years of our school term would mean for their instruction is not difficult to understand. But education of the deaf not being compulsory, it is handicapped by careless parents, who too often keep their children back from school to let them go out to work, when they only have acquired a very elementary education. That part, however, of the pupils who complete the whole course of instruction leaves school with a stock of useful knowledge which our children could not possibly acquire during eight short years. If we compare the corresponding grades in the American schools and ours, I think it would be difficult to point out which of them has obtained the best results in a given time—a fact which proves that there is good work done in the deaf schools on both sides of the ocean.

A characteristic trait in the American school is, I believe, the great pâins they are taking in inducing their pupils to independent reading of papers or books. That feature is by no means strange to us, but it is carried out more thoroughly in America. The printing offices connected with so many of the big schools render a most appreciable service for this reading purpose. A good many schools edit their own school paper, which contains columns of variable difficulty, adapted to suit the several departments of the school. These school papers form an excellent pedagogical aid for the teacher, and as long as we cannot have similar assistance for the work, we have reason for complaint.

Besides this, all schools are well supplied with reading matter for their children of various kinds and values—newspapers, lots of magazines, and plenty of books in the library; and sometimes loans of books are made from the public libraries that are to be found in every self-respecting American city.

Owing to the maturity and greater discernment of the pupils, you will find clubs of various kinds in the American schools. Some of them are of mere sociable character, others of literary, and others again for religious purposes. No doubt their sessions further the spiritual development of the members.

The field of activity where the American school indisputably is superior to the European is in the trade teaching. The excellent system of manual teaching we find in some of the large institutions

is, of course, incident to the longer term of instruction, and we could not possibly adopt it except we could prolong the term simultaneously, and even then it would be a difficult problem to solve, owing to the smallness of our schools and institutions, as to whether the number of trades taught in each school would be too restricted or much too expensive.

Amongst the schools I visited, I should think that trade teaching was taught most excellently at Mt. Airy, Philadelphia, and at Washington Heights, New York, but also in other schools I saw work exceedingly well done.

For the sake of convenience I shall refrain from going into detail, and only mention what is taught at the Mt. Airy institution, where the pupils commence to work in the industrial department when they have entered the intermediate classes. They are kept at work some hours every day in the following industries: Baking, masonry, cabinet-making, painting and glazing, printing, shoemaking, tailoring, and even butchery. The girls are taught drawing, sewing, dressmaking, laundry work, ironing, cooking, etc. The pupils master the work so well and the demand for hands is so great that they easily find occupation, and are well paid for their service when leaving school. Especially are the circumstances excellent for young compositors, who can earn from $17 to $18 a week to start with. But if you were to witness the skill with which they handle the heavy presses or the linotype, you would perhaps not be astonished.

The majority of the American deaf children get their education in institutions, whereof the largest can accommodate between 500 and 600 pupils.

As a rule, the staff has no other duties than to teach in the classes; when not in class the children are under the care and direction of supervisors; and in some institutions there are almost as many supervisors as there are teachers, the pupils being divided into small groups, each under the care of its supervisor, which arrangement makes it quite easy not to overlook the wants of anybody.

Although the boarding system is the prevailing one in America, a new form, the day-school system, has lately become quite common in several places, especially in Chicago and Wisconsin. The eminent scientist, Dr. Graham Bell, has worked with great zeal for the spreading of the day-school idea, making it thus possible for the parents to have their deaf children living a real family life in their own homes. This is so far an advantage, but in other respects the system is handicapped with drawbacks.

In the above I have tried to generalize some of my impressions from my visit to American schools in the summer of 1906, which impressions perhaps can be put into two statements:

1. Besides giving free admission to all deaf children to good elementary instruction, those of the pupils who want to pass through the higher grades acquire an amount of knowledge we could not possibly teach our pupils in our eight years' term.

2. The pupils have in many schools the opportunity to learn a trade so thoroughly that when graduating they are able to earn their own living as skilled workmen.

Report upon Individual Schools.

The first American institution I visited was in Mt. Airy, a suburb of Philadelphia, with 510 pupils. This school has, under Dr. Crouter's skillful leadership, been transformed from a Combined school into an Oral, with the exception of a special department containing 30 pupils, or about 6 per cent, unfit for Oral education. These latter are taught manually.

This institution was the third on the American continent, and formerly was situated in the center of the city, but in the nineties was removed to a beautiful site in Mt. Airy, where splendid buildings have been erected. With its different premises, playgrounds, and lawns, it covers 70 acres of land.

The school consists of three departments, each in an excellent locality, having its own household and a special principal. We who have only very small schools for the deaf are perhaps disposed to think that the single individual must get lost in such a crowd of pupils; but this does not necessarily follow, as I was also told that Dr. Crouter, for instance, knew every one of all the 510 pupils, and in some cases even knew their family relations. I dare say this institution is one of the very best in America, both in regard to the amount of knowledge it imparts to the children and the good results secured in speech and lip-reading; and, as before mentioned, this school possesses the most complete system of trade teaching in existence, and it may thus, in this double quality, serve as a model of a modern school for the deaf.

It is well known also in Europe that in America there has been started homes for the training of little deaf children before school age. Maybe it is not incorrect to say that Miss Garrett's training home in Bala, Philadelphia, is the most interesting of this category. The leading ideas for this special training may be explained briefly as follows: Each little child born, whether hearing or deaf, must be born with some degree of congenital disposition for speech as a means of communication to others, being a descendant of hundreds of preceding speaking generations; consequently, it will be quite correct to treat even little deaf children as the other children, and speak to them in the same manner, in order to give nature the opportunity, by the help of the other faculties, to compensate, and even cover, the lack of hearing.

I visited this school in company with Mr. F. W. Booth, the able editor of Association Review, who follows the work in Miss Garrett's school with the closest attention. There were 60 pupils on the roll, whereof the youngest were two to three years old. The length of the course is six years. It was both interesting and amusing to see these little ones moving about with their toys, the teacher speaking to them exactly as she probably would do to little hearing ones

of the same age. At this early stage the means of expression were inarticulated sounds or natural gestures. Very often their entire face was transformed into one great sign of interrogation, which, from time to time, cleared up into a broad smile when some meaning had been found out of the many queer movements the little eyes saw the lips of the teacher making; or it was the expression of the teacher's face that was translated and caused the smile. Soon the little child tries to imitate the movements of the mouth of the teacher, without, however, having any idea of what it really means. I got the conviction that many of the older children were exceedingly clever lip-readers, though they were very young, and probably did not know all the words the teacher used. But with regard to a distinct articulation, I am sure that Miss Garrett has been led astray by her theories. I consider it to be quite impossible for the majority of deaf children to acquire a fairly distinct pronunciation without the aid of systematic drill, and, so far, I was not deceived by what I heard. In most cases, it must be said that the articulation was not satisfactory, but, agreeable to the principles followed, I was prepared for that result. I have, however, to state that in some cases, even with congenitally deaf children, I noticed a very good articulation—a fact I would not have believed possible to obtain by the methods in use.

If Miss Garrett could alter her views upon the processes a deaf child, as a rule, has to follow to acquire a distinct articulation, and adapt her proceedings in accordance thereto, instead of, as now under all circumstances, believing in nature's power to remedy itself, I should think the results in articulation, and consequently of the whole school, would gain so much that they could stand every criticism.

When the pupils have ended the course in Miss Garrett's school, she tries to induce the parents to place them in ordinary schools among hearing children. Skeptics told me that only a few of these deaf thus placed were able to follow the instruction successfully, an assertion that sounds quite reasonable in the ears of an experienced teacher of the deaf, but contrary to this supposition are the written statements from teachers of some of these children in the public schools who testify that they can follow the class without handicapping the instruction. In the institution in Mt. Airy I found 37 of Miss Garrett's former pupils, either placed there directly from Miss Garrett's school or after an unsuccessful trial in a school for the hearing. All of the teachers in whose classes these pupils were found complained of the difficulty or impossibility they had in the eradicating of strongly established faults in articulation and transforming them into a correct pronunciation.

There are several schools for the deaf in New York city and the suburbs, but I did not find time to visit all of them. I made a selection of them, and saw the Fanwood institution, the school in Lexington avenue, and Mr. Wright's private school.

The first mentioned school is the second oldest in America, and only one year younger than the famous Hartford school. It had last year 490 pupils, and is very ably conducted by the principal, Dr. Currier. I think this institution has perhaps a more distinctively American cut than the other schools I saw, which made it not less interesting to me. All the exterior things—buildings, appliances, etc.—are perfection itself, or close to perfection; in many respects elegance, approaching to extravagance, prevails from the basement to the chimney pots. The school is owner of considerable wealth and can afford some display of it. All the boys wore uniforms and were enrolled in a cadet corps. In the morning a division of the brigade walks to the flag pole and runs the Stars and Stripes to the top under military salute; at night it is again lowered under similar ceremonies. It is with full music at the head that the pupils march to the dining-room at meal times. Though it was common to notice good discipline in the several schools when the pupils went to the table or to the class rooms, to the gymnasium or to the shops, I saw nowhere more punctuality displayed than when the pupils marched in, five hundred in number, to the huge dining hall; it was a pleasant sight. Dr. Currier assures me that the discipline among the boys has ameliorated considerably since the introduction of the cadet corps. I shall not deny that it was rather queer in such a democratic country as America to see the male teachers wear a uniform and a saber and to hear the sounds of drums and fifes in a deaf school.

Apropos of the music, the band consisted of four or five drums, four or five fifes, and a couple of signal horns. The very able drum-master had, through patient and diligent drill, succeeded in teaching the band, purely mechanically, for most of the players were entirely deaf, to play several marches and the national anthem quite well.

The method in use in this school is eclectic; the principle is that each child should be taught after the method or methods for which he is best fitted, which in practice is the Combined system.

In the lower grades I saw oral work practiced to great extent, but was struck by its diminution up through the different grades, and in the upper grades it was the silent method that prevailed. It looks as if articulation is suffocated in the companionship with signs and the hand alphabet, which, *theoretically,* should be an aid.

Though the results obtained may be said to be quite satisfactory—the essays of commencement day were even excellent—I saw still finer results, for instance, in the Northampton school, where the pure oral method is in use. It seemed to me that the tendency in the Fanwood school is in favor of more oralism, and I have no doubt that such an able man as Dr. Currier will follow that movement which is so obvious in the American schools of the deaf of the present day—more stress laid on the oral instruction and less on the manual. There was a special class for deaf-blind pupils in this place, wherein three girls showed excellent work. Altogether it was an interesting visit, well worth a stay of several days. The site of

the institution is simply splendid—on a high bluff on the banks of the Hudson river, where busy boats are steaming up and down.

The institution on Lexington avenue was started as an oral school, and that method is still exclusively in use. The attendance was about 220 pupils, and it has been in continual growth for years. The premises are now so overcrowded that it is impossible to admit more, and the principal has to refuse many applications for want of place. The surroundings do not allow any extension of the buildings; the only way open is upwards. The buildings are comparatively new and very good, which makes it a serious matter to take the decision to move to another site. It is rather pitiful to see such an excellent school in that dilemma. The present principal, Mr. Gruver, an able young man, has been teacher in the Mt. Airy school several years. He has brought good order into things somewhat entangled at his arrival. I have only good remarks to make upon the instruction given. Both articulation and lip-reading were satisfactory. The trade teaching is, however, carried on under more modest forms and less completely than in Mt. Airy, Philadelphia, or in Fanwood, New York.

Mr. Wright's private school contained about a score of pupils, spread over different grades; there were from two to four children in each class. The instruction is entirely oral, or aural, and the results corresponded well to the ideal circumstances these happy children were placed under. The principal, the teachers, and the pupils formed one large family, where every opportunity was present for the development of the speech. Mr. Wright used in several cases the microphone, and expects to derive some profit from it. In most other schools I visited the confidence in this or similar apparatus seemed to be somewhat scant, even if they were well equipped with such appliances.

As previously mentioned, the first American school for the deaf was established in 1817. In its grounds are statues erected for the two men whose names will be forever connected with the pioneer work for the deaf in that part of the world—Thomas Hopkins Gallaudet and his faithful assistant, the deaf Frenchman, Laurent Clerc.

The old time and the new seem to meet in this school, with its 160 to 170 pupils. The main wing is very old, more than eighty years, an uncommon age for buildings in the States, while the infantile department, the shop building, etc., are brand new, with splendid equipment. The old manual method is dominating in the old building, where several old teachers are on the staff, whilst their young colleagues in the other section mostly use and believe in oralism. The principal, Dr. Williams, is equally esteemed by the two camps of method in America, for it cannot be denied that sympathy and antipathy are often distributed in accordance with method standpoint in America as well as in Europe.

The Clarke School, with about 150 pupils, is perhaps the best of oral schools, or, I should rather say, of all schools of the deaf in America, in regard to high attainments in knowledge, especially

history, distinct speech, and lip-reading. The stock of learning with which the graduates leave this excellent school was, in my opinion, superior to what I saw in other places.

The "first citizen" of America, Mr. Hubbard, who was also the father-in-law to Dr. Graham Bell, has done very much for the establishment of this school, as well as for the oral method as a whole. It is now under the—both by friend and foe acknowledged—capable leadership of Miss Caroline A. Yale. This school holds a unique position in one respect—all the teachers, except a man in the cabinet shop, are ladies!

It has not seldom been contended that the boys would suffer and grow up effeminate when exclusively surrounded by women. There may lie some truth in that opinion, but, under the present regime in the Clarke School, I did not see anything of it. I have nowhere met nicer young men than there.

What is accountable for the fine results in this place? The main factor is, of course, the principal and the excellent staff she is surrounded by; they all seemed to be animated with a mild Christian belief that their work was something of a mission, this spirit being combined with intelligence and indefatigable zeal. In the second line comes the excellent staff of supervisors, almost as numerous as the staff of teachers. Even if the number of supervisors is more limited, and the supervision consequently less effective, in the other schools I visited, they were everywhere more numerous in the American schools than they are in ours and in the institutions I have visited in France and Great Britain. There was one supervisor for each ten pupils in the lower grades of Miss Yale's school; the pupils are thus always under skillful care of trained persons, both in the class and outside its walls, a circumstance that speaks highly for the good results.

Miss Yale has recently had the great satisfaction to see two of her former pupils enter one of the most famous American universities of the East, to follow the study of civil engineering, both being able to follow the course, though congenitally deaf.

A normal class for young ladies desirous of joining the profession as teachers of the deaf is connected with this school; the length of the course is one year. The number of students has hitherto been too limited, owing to the lack of endowments for that purpose, but through the last generous gift of the great benefactor of the deaf in America, Dr. Graham Bell, the outlook for this activity has been bettered. In the future the normal class will be enlarged to accommodate ten students.

The site of this school is very fine, on a wood-covered hill, with free view over the fertile valley, through which the Connecticut river winds its way like a silver thread, and kisses the feet of the blue hills in the background of the beautiful landscape.

In the Horace Mann school, in Boston, which had about 150 pupils enrolled, I met another well-known female pedagogue, Miss Sarah Fuller, whose name is connected with the teaching of articu-

lation to Helen Keller. Her school was the only day-school I visited on my journey. With a few exceptions, all the pupils lived with their parents. Contrary to what I expected, this state of things did not seem to further the use of speech and the efficiency in lip-reading. It must be admitted that the hours spent in school are fewer for these children than for boarders, and consequently the manner in which the pupils use a good deal of their time every day is almost out of reach of the control of the school; this disadvantageous circumstance handicaps the results.

Miss Fuller has induced a circle of ladies in the town to take interest in her girl pupils in the upper grades; these ladies have formed a committee that visit the school a couple of hours once a week to speak to the children, and occasionally they invite the girls to their homes, and a bond of sympathy is thus created that can be of high importance for the girls. I deem this activity of so much interest that it is well worth being imitated by other schools.

Miss Fuller has also exerted great activity for the establishment of a home school for little deaf children before they reach school age. It is situated in a suburb at a distance from Boston, and is called the "Sarah Fuller Home."

When I had finished my stay in Boston I went westward to Rochester, which is reached in a day by express. Part of the journey is over the rails that now form the great highway between New York and the West; it goes through a beautiful country, annually passed by many thousands from our Scandinavian countries on their way out to the far West.

I had expected to find another interesting school for the deaf in Rochester, and am glad to say that I was not disappointed. I believe there is no more zealous champion for the exclusive use of English and the total discarding of signs in the instruction of the deaf than is Dr. Westervelt. I am pretty sure that the place is entirely without conventional signs, as they are made superfluous by a means of communication that cannot be misunderstood, namely, the ordinary single-hand alphabet. When the teacher spells on the fingers to the class he speaks the words simultaneously, but it is, of course, impossible to tell how much of that speech is grasped by the eyes of the pupils, whose chief aim it is to read the spelled words. As in other combined method schools, the instruction in speech and lip-reading is only given in special lessons, and the perfection the pupils attain therein is very similar to what is obtained in similar schools. Notwithstanding these unfavorable circumstances, I have to state that I met some very smart lip-readers in this school who were congenitally deaf.

The commencement exercises took place during my stay in the Rochester school. The graduates—that is, that part of the pupils who have finished the whole course—were that day the recipients of much attention from many sides. They were placed on the platform, nicely dressed, and addresses were made to them. They received some very pretty presents, and they were guests of honor at a

reception in the principal's house. They were, however, also active partakers in the exercises. Each of them had elaborated an essay, after the custom of the country, on a subject they had chosen themselves, which they recited for the audience. The contents of the several essays proved these young people to have a good command of language and to be in possession of a good general judgment. In this connection we must remember that it is by far not all the pupils of a school who leave it as graduates, for if that was the case we Europeans would see ourselves left too far behind by our friends in young America. The majority of the pupils do not attain the top classes of a school, and a great many leave the school in no way better equipped than with us.

In the Rochester school I knew that the Lyon phonetic alphabet was in use, and I was greatly interested in seeing it in practice. Mr. Lyon, the genial inventor of this alphabet, which is adapted to all sounds of the Melville Bell Visible Speech, is not a teacher of the deaf, but a well-to-do man living in Rochester, whom I had the pleasure of meeting several times. He has taken great interest in educational matters, especially in the education of the deaf, and has spent much time in the classrooms of the Rochester school. To my mind, it appeared as if Dr. Forchhammer's hand positions in his mouth-hand alphabet are easier, but Mr. Lyon was of the opposite opinion. The Lyon system is taught in the Rochester school and mastered by a good number of the pupils, but it is not in use outside the classroom in the special lesson hours.

Another noticeable particularity for this school is the clear conception had of the advantage of imitation in the acquisition of language. Already even in the lower grades a voluminous flood of language is poured out over the minds of the pupils, and some of it takes root.

There was a feature in the Rochester school that impressed me; it was the unusually affectionate relation between the principal and the pupils. Many natural fathers and mothers do not extend as much love to their offspring as does this stranger to their sons and daughters. That religious conviction, which is very conspicuous, both in the modern as well as in the more old-fashioned American life, was the acting power in this regard was evident.

The southernmost of the schools I visited was the famous Gallaudet College, in the city of Washington, started on the initiative of Dr. E. M. Gallaudet, a son of the world-known founder of the first school for the deaf in America, but now supported by the central government. This school was founded in 1857 under modest conditions, but it has, under Dr. Gallaudet's eminently able leadership, developed into an institute of world-wide fame as the first school on the globe that imparts secondary instruction to the deaf.

By a report I had read of a German visitor to the place, I was led to think that the stock of knowledge the students got at that college was very modest. My personal impressions differ greatly therefrom. And when I now state as my opinion that this school

imparts a fairly good education to its students, I have at least the consciousness of having spent so much time in the different classes that it is not altogether erroneous.

There were about one hundred students spread over the different classes of the five years' course. To become a student it is necessary to pass an entrance examination, for which special preparation is indispensable for ordinary graduates of the schools for the deaf. Since 1887 female students have been admitted, and their number is increasing from year to year. The college maintains a good standard for the attainments in the different classes through annual examinations and the refusal to pass along, if the student is lacking, whether in capacity to follow the course or in the display of energy.

The aim the college has put forth is to bring the student to the same level of mental development as the hearing youth gets in an ordinary college. In several branches of science the ground covered in Gallaudet College is equal to or even surpasses what is reached in other colleges, but, on the other hand, Gallaudet College fails to bring its student up to the same mark in several other respects; for instance, the attainments in French and German were very modest, and if they have been taken as a basis for a judgment of the whole course I understand the disappointment of a visitor predisposed to find something remarkable.

Perhaps it is not out of place to add that the amount of learning exacted in colleges on the European continent as a rule is more extended than in similar schools in America. The persons and the government who have created this excellent school deserve the homage of every one interested in the education of the deaf. It is elevating to see the high development deaf people can be brought to, when intelligence and energy are working together and conditions allow it. At the same time, as I am full of admiration for the noble work this college is doing, it would be misleading not to mention what I think is lacking in the instruction. It is clear that a high percentage of the students are semi-mutes, and a good many among them were very able speakers and lip-readers when they entered, yet very little is done to keep up this accomplishment, not to speak of their further development. Several of the students told me their use of speech and lip-reading had retrograded in the college, which of course it is bound to do when they do not see other means or use other means of communication than the fingers, notwithstanding that a good many had lost hearing late in life. It is not necessary to be born a diviner to foresee that, in the future, reforms will be introduced to remedy this fault.

In close connection with the college is the Kendall School, that accommodated 60 to 70 pupils when I was there last year. Though I think some of the teachers very clever, the results of the instruction were, taken as a whole, not satisfactory—not up to date. The main interest in Washington must necessarily be the education of the adult deaf; this leads easily to some unconscious forgetting of the other activity, of course much against the will of the leader.

The activity in Washington is not limited to what I already have mentioned, but a normal class is connected with the school, where three or four normal students, or fellows, prepare themselves to become teachers of the deaf. The duration of the course is one year; both female and male students are admitted, daughters or sons of deaf parents having the preference. The theoretical part of the training is especially limited, and although the oral schools have got, and continually get, some teachers trained here, it appears to my mind that in such cases there must exist some misproportion between the need of an oral school and the training given the young teacher.

I don't wish to be unjust in my dealing with what I observed in Washington. Perhaps it would be too much to expect to see so great a task brought to perfection in one generation, essentially by one man's skill and energy. For Europe it is something of a disgrace that it was young America that first took up the problem to raise the education of the deaf to a higher standard half a century ago, without anything similar having yet been established in the "Old World," although we Europeans, at the bottom of our hearts, like to caress the thought that we are the only true banner-bearers of progress and culture.

This higher education has not only been a blessing to the comparatively small number of students who have attended Gallaudet College, at the present time about 1¼ students annually per million inhabitants of the whole country, but it has influenced the education of the deaf in all parts of the country and raised the general standard.

Every foreign student of the American school system for the deaf must come to the conclusion that this vigorous nation has left Europe behind in more than one respect. The very important question of trade teaching, simultaneously with the ordinary school instruction, which is discussed at the present day very eagerly in our professional press, has in many of the large American schools had a thoroughly good solution, whilst it will be a very hard problem for our smaller schools to solve satisfactorily. The term of instruction has continually been extended for the hearing child, and the tendency is still to further extension for an ever-increasing number of pupils. What is, then, more natural than that this movement will be carried over to our educational work for the deaf? And under an extended course no doubt the aim of the school for the deaf will be directed toward the creation of a more complete scheme for trade teaching. At present I shall not try to predict *when* the day will come when the now common eight years' course will be extended to ten years, but I am not for a moment in doubt that it will come. The Americans give already their deaf children an allowance of ten to twelve years' free instruction in an institution, and the students in Gallaudet College get an additional plus of five years!

I came home from America under the impression that we have every reason to be content with what we are able to accomplish in our schools of the deaf in eight years of a school course, partly

owing, no doubt, to our far better system of classification, but also convinced that much more can yet be done. The way ahead is still long before perfection is attained, both on our own hemisphere and on the other in the west, but they are nearer the goal than are we.

In concluding these only fragmentary notes of my impressions of what I observed in the American schools for the deaf, it would be incorrect not to mention two factors of importance for the furtherance of the cause on the American continent, viz., the two, in Europe, well-known periodicals, The American Annals and THE ASSOCIATION REVIEW, edited respectively by Dr. E. A. Fay and Prof. F. W. Booth, under the auspices the one of the "Convention of Principals" and the other of the "Association to Promote the Teaching of Speech."

One of the most useful activities for the benefit of the education of the deaf, and, chronologically, the keystone of the work done, is carried on by the Volta Bureau, in the city of Washington, established and endowed by Dr. Graham Bell, who, by his many generous actions in the furtherance of the education of the deaf, has won world-wide fame and the regard of all persons engaged in the instruction of the deaf. This Bureau, during the short period since its establishment, has accumulated an immense collection of literature, and the information which it has thus far collected, published, and distributed throughout the world serves greatly to inspire, guide, and encourage teachers in their efforts to achieve success.

The visit I paid to that institution, where I had the good fortune to make the personal acquaintance of its efficient superintendent, the Hon. John Hitz, remains one of the pleasant memories of my tour. When moving about from shelf to shelf in this treasury of knowledge, where so many fruits of human genius and energy, inspired by compassion for suffering fellow-beings, are gathered, you are deeply impressed with reverence for the pioneers of the *past* and respect for the persons who carry the burden and the heat of the *present*. In contemplating all these silent witnesses of human solidarity and indefatigable energy a living hope for the *future* arises that our beloved cause will continually find supporters, make progress, and prove a blessing to the deaf race.

REPORT ON A VISIT TO SOME OF THE AMERICAN SCHOOLS FOR THE DEAF.[1]

By W. H. Addison, Glasgow, Scotland.

[A year ago our American schools for the Deaf were favored with a visit of inspection by Mr. W. H. Addison, Headmaster of the Glasgow Institution for the Deaf, and Mr. F. G. Barnes, Headmaster of the Homerton, London, Residential School for the Deaf, traveling in company under the auspices of the Moseley Commission. In our last issue we gave liberal extracts from the report made by Mr. Barnes upon his observations and conclusions, and we now give below the report in full of his colleague, Mr. Addison. An educator of long experience and with broad knowledge of the work from observation and study of it in various countries, Mr. Addison commands attention in all that he says or writes, and his report, we feel sure, will have large interest for our readers.—Editor Review.]

I beg herewith to submit a report of observations made during a recent visit to some of the American Schools for the Deaf. The tour occupied seven weeks, of which five were spent on shore. Owing to the long distances of the schools from each other and the shortness of the time at my disposal, I judged it wise to confine my investigations entirely to the Eastern portion of the Continent, though I was informed that some of the Western States have made remarkable progress in education of recent years, and that some of the finest buildings and most progressive schools are to be found west of the Alleghany Mountains. It was with much regret therefore that I found myself obliged to decline the very kind invitations which I received to extend my journey to the West. Everywhere I did go I was received with the greatest kindness and cordiality, and I have to tender my warmest thanks to the many friends who combined to render the tour one of the pleasantest and most instructive it has ever been my lot to make.

The following is a list of the institutions and schools visited: New York, Institution for the Instruction of the Deaf and Dumb,

[1] From a "Report on a Visit to some American Schools for the Deaf. (Under the Auspices of the Moseley Commission). By W. H. Addison. 1907."

Fanwood, Institution for the Improved Instruction of the Deaf and Dumb, Lexington Avenue, and the Wright Oral School; Washington, Kendall School, and Gallaudet College; Philadelphia, Institution for the Deaf and Dumb, Mt. Airy, and Miss Garrett's Home for Little Deaf Children, Bala; Rochester, Western New York Institution for Deaf and Dumb; Belleville, Ontario, Ontario Institution for Deaf and Dumb; Boston, Mass., Horace Mann School for the Deaf, Sarah Fuller Home for Little Deaf Children, and New England Home for Aged and Infirmed Deaf Mutes; Northampton, Mass., Clarke School for the Deaf; Hartford, Conn., American School for the Deaf.

In addition to the above, I attended services for the Adult Deaf in New York, Philadelphia, and Boston, and had the privilege of speaking a word in season to the silent congregations of these cities in their own silent finger language. My reason for visiting these churches, apart from the interest I take in the moral and religious welfare of the Deaf, was to obtain opportunities of meeting the adult deaf out of school, so as to check my opinion of the work of the school-room by the results in the after life of the pupils. It was a great pleasure to meet so many intelligent deaf men and women, and the happy, contented, and prosperous appearance of the majority spoke well for the education and training they had received in the schools.

General Impressions.—The most abiding impression which I brought back with me was that of the enormous material resources which are being lavished on every branch of education, and of which the deaf as a class are receiving a full share. In the equipment of her schools for the deaf America far surpasses Great Britain. The care and instruction of the deaf seems everywhere to be regarded as one of the first duties of the State. In most of the States a State school is usually provided in a central locality, at which every deaf child under the age of 21 can claim education, combined with maintenance, *as a right*. In a few of the States the schools are managed by private corporations as in this country, but the laws under which they work are most liberal, and the grants which they receive per capita are calculated on a scale which to us seems lavish. The grant per head is never less than £50—£60 is paid by New York State, and even this large sum is, I believe, exceeded in the case of at least one school.

Nor does this liberal treatment by the State check the flow of private benevolence. Large donations towards the funds of insti-

tutions are often made by private citizens. The magnificent trade school of the Philadelphia Institution was the gift of one of the directors; the Clarke School, at Northampton, was founded and endowed by the gentleman whose name it bears; the New York Institution is so wealthy, at least in the eyes of a poor Scot, that the Principal scarcely knows how to find an outlet for the accumulated wealth of the trust. Many of the most prominent citizens of the Republic give freely of their personal services, as well as of their means. The interest taken in the blind deaf by their enthusiastic friend, William Wade, the personal services and generous gifts of Graham Bell, are well known to teachers all the world over; but the interest of many others, who are not perhaps quite so famous as these two gentlemen, is no less keen and constant. One of the directors of the institution at Philadelphia has gone to the trouble of compiling a Book of English Historical Sketches of a most interesting kind, specially for the use of the pupils. The American School at Hartford possesses a fund devoted entirely to the publication of Special Lesson Books, and the utility of such a fund will be appreciated by teachers when we say that Miss Sweet's well-known and highly prized readers have been made available to the Deaf by this means.

Though the education of the Deaf is not compulsory in America as it is in this country, the American people generally seem more fully alive to the value of education than are the people of Great Britain. This desire manifests itself in many ways. Boys and girls think it no shame to take any kind of situation during the summer, provided it will bring in a sufficient number of dollars to enable them to take a college course during the winter. Many seek occupations as farm help, others go out as waiters in steamboats or seaside hotels, while in one city I visited my boots were blacked by a student from Mr. Moody's Bible Training College at Chicago. This desire for a good education on the part of poor students reminded me of the spirit which animated the Scottish people before the advent of factory-made cities had begun to sap the national ideals.

One result of this keen desire for education and of the esteem in which the dispensers of it are held is that the teachers of the Deaf are much better paid than are the teachers of the Deaf in this country. Salaries, as a rule, are at least double the rate that has obtained in this country in the past, and, in addition, the teachers in the residential institutions are not burdened with the out-of-school duties which they so often have to perform in this country. Teachers are engaged as teachers, not as supervisors. Five hours' hard work in school—and it is real hard work that is expected of them—plus the proper and careful preparation of lessons and the correction of the pupils' exercises, is considered an adequate day's work, and the domestic supervision is entrusted to its rightful department—the domestic staff. For this reason a good class of teachers, highly educated, sympathetic, and full of enthusiasm is generally to be found in the American institutions.

Another advantage which the American schools can claim is that their pupils stay longer at school than they do here. A ten or twelve years' course is common, and in one State at least a seventeen years' course is possible, and entirely free of charge to the parent. It is therefore a common sight to see youths and maidens of 20 or 21 years of age attending school, studying hard the one half of the day and learning their trade the other half. It follows, as a matter of course, that the attainments of such pupils must be higher than those of our own scholars who leave school at sixteen or, as was the case not so long ago, at fourteen. The provision for trade teaching to such pupils in all the large institutions is excellent, and the graduates on leaving school step at once into the wage-earning class and become useful members of society. There appears, however, a tendency to lower the age at which the children are admitted to the school, with a corresponding tendency to lower the age at which they leave school. Whether this will be a beneficial change time alone can show.

A few notes regarding each school visited are given below. They are not intended to be exhaustive, but are written chiefly with the view of indicating the distinctive features of each school visited.

The New York Institution at Fanwood.

This institution is located in a commanding situation on Washington Heights, overlooking the Hudson River. The number of pupils is about 450, and the method of instruction is officially described as combined or eclectic. The school is graded on the departmental plan, being divided into a kindergarten, primary, intermediate, and advanced section, each section in charge of a principal teacher, who is responsible to the superintendent. The pupils, however, are all, or nearly all, housed in one huge building, a plan which may have excellencies, but also has very considerable drawbacks. In the teaching of language Miss Barry's Five Slate Method is much used, as it is in many of the American schools, where it is found exceedingly advantageous in helping the pupils to classify the parts of a sentence. The medium of communication is chiefly Manual Alphabet (single hand). Signs (natural and conventional) are used largely for explanatory purposes and for chapel and collective exercises. Instruction in speech and lip-reading is given to selected pupils. There are several Blind-Deaf pupils in the institution who are well cared for, and the facility with which they can receive and give back ideas by means of the finger alphabet, and the progress they have made in their studies, is remarkable and reflects great credit on their instructors. The provision for the teaching of trades is very complete and comprises joinery, printing, sign-writing, and horticulture. The printing shop especially, under the charge of a very intelligent deaf man, is highly successful. A special feature of this school is military drill. All the pupils, and also the officers from the principal downwards, wear a neat uniform, and the whole institution is worked

as a military school, even to the length of maintaining a drum and fife band. It seems strange to hear of the "Star Spangled Banner" being played by a band of Deaf Mutes, but that was our experience. The explanation of this phenomenon is that amongst this large number of pupils there are many who are only partially deaf, and the principal has hit upon this expedient, combined with acoustic or ear-training exercises, for rousing the dormant sense and rendering it more sensitive to sounds. There is no doubt but that in many cases benefit has accrued from this treatment. The military organization is also of value in helping to implant the idea of American citizenship into the minds of the people of all nations who are being dumped down into New York by the Trans-Atlantic ferries. The saluting of the flag at commencement and close of school is an institution which might well be copied by the schools of this country.

New York Institution for the Improved Instruction of Deaf Mutes.

This institution is situated on Lexington avenue, in the center of the city. The number of pupils is about 200, and the method of instruction is oral. As far as the situation and circumstances of the school allow, the work here is very thorough and good. The departmental system of grading obtains as in the institution referred to above. Geography is taught largely by means of imaginary voyages. Arithmetic is in the charge of one teacher, who devotes all her time to the subject and is consequently an expert. The manual work is based on educational lines, not on trade teaching. The woodwork teacher, a very intelligent man, does not insist on a very high finish, especially in the junior classes. He says that in the present state of the American labor market it pays better to train the pupils in adaptability and readiness to cope with emergencies in a rough and ready fashion. In the cookery room the girls are taught to prepare a full meal for themselves, to lay out the table properly, and to take turns in serving. If the dish is badly cooked, they suffer the discipline of consequences by having to eat it. On the other hand, if it is a success, the enjoyment of it is a full reward. The gymnasium is in charge of an expert, who keeps a register of the physical development of the pupils.

The Wright Oral School.

This is a private school for the children of the well-to-do classes. The system is oral, with acoustic training where it seems desirable. Everything that ingenuity can suggest and wealth purchase seems to be done here.

Gallaudet College and Kendall School, Washington, D. C.

The Kendall School is a small one of about 40 to 50 children belonging to the District of Columbia. The system of instruction is combined, and several of the teachers are deaf. The quality of the

pupils' intelligence seemed rather poor, with the exception of the top class—a class composed of young men and women drawn from far and near, with the object of preparing themselves for the entrance examination of the college. This class exhibited a high type of intelligence.

The outstanding object of interest at Kendall Green is, however, the Gallaudet College, to which the Kendall School is a mere adjunct. This college, so called in honor of Thomas Hopkins Gallaudet, the Pioneer Instructor of the Deaf in America, represents the life-work of the elder Gallaudet's younger son, the well-known and highly esteemed Dr. Edward Miner Gallaudet. The object of this college is to place within reach of the more intelligent Deaf Mutes, a collegiate education of a character approximating to the standard of the best colleges for the hearing. The full college course, admittance to which is gained by an entrance examination, embraces English, Latin, Greek (optional), French, German, logic, natural science (botany, zoölogy, chemistry, physiology, physics), mental and moral science, gymnastics, etc. The courses of study are carefully graded, so as to lead on the students step by step to higher and higher planes of thought. The medium of communication employed is the finger alphabet and signs, but provision is made for instruction in speech and lip-reading for those who desire it. In some of the classes the professor speaks and spells simultaneously and with great facility, and the pupils seem able to take in the sense of both equally well. Two days were spent in this interesting establishment, and most of the classes were seen at work. The results generally, in my opinion, were good. A class in German, conducted by Dr. E. A. Fay, struck me particularly as affording excellent testimony to the ability of deaf mutes to undertake this higher educational work. Coming fresh to the study of this difficult language less than six months previously, they had made such excellent progress that they were able to render into very passable German fairly difficult English sentences spelled out on the fingers of their instructor. It is doubtful if any class of hearing students have exhibited better results in the time. In a class-room adjoining, a class of eight girls were busily engaged translating an extract from one of Cicero's Orations into English. They seemed quite at home in the work, and, in the grammatical drill which followed this, they exhibited equal proficiency. Other classes seen at work were engaged in studying physics, Mediaeval history, chemistry, English composition and literature, algebra, in all which subjects much good work was being done. If one might venture to offer any criticism of the work of this most admirable and unique institution, it would take the form of suggesting that the provision for oral teaching might be extended and made more thorough and systematic. This seemed to be the weak spot in what is otherwise a thoroughly equipped college for the higher education of the deaf—a college reflecting equal credit on its founder and principal and on the American Government, which has so liberally endowed and supported it.

THE PENNSYLVANIA INSTITUTION FOR THE DEAF, MT. AIRY, PHILADELPHIA.

This is the most magnificent institution it has ever been my lot to visit. The number of pupils exceeds five hundred, who are housed in three large buildings, entirely separate the one from the other, each in charge of a principal, who superintends the educational work, and a matron, who has charge of the domestic department, the whole responsible to Dr. Crouter, the general superintendent. The buildings, in addition to those above enumerated, comprise a splendidly fitted trade school, a hospital, gymnasium, etc., the whole situated in a park of some 40 to 60 acres, in a pleasant suburb of Philadelphia. The buildings, having been erected little more than a decade ago, are, of course, fitted up in the best modern style. They were planned under the supervision of the present principal, Dr. Crouter himself, and every device that an experienced teacher and superintendent could suggest seems to have been included in the arrangements by the architect. A special note should be made of the fact that all the rooms are very large, lofty, and well lighted, the peculiar arrangement of the buildings being such that light is admitted to most of the school-rooms from two and three sides.

The method of instruction is almost entirely oral, only about 6 per cent of the pupils being relegated to the silent department. The manual alphabet is rigidly excluded from the school-rooms, and no gestures or signs are tolerated except such as are made naturally and easily understood by hearing people. All the instruction is given by and through speech, except in the case of the few pupils who, from physical or mental weakness, are not considered suitable for this mode of teaching. The methods used for awakening the dormant intelligence of the pupils, for training them to articulate and read the lips, and for developing their language are all excellent. The organization of the school is a model of completeness and suitability of means to end. The pupils first enter the primary department, where they receive a thorough grounding in articulation and lip-reading, and the elements of language. The course lasts three years. They are then transferred to the intermediate department, where they spend another three years of their school life. Here the elemental language forms and the vocabulary already acquired are enlarged, codified, and made permanent. In the advanced department the pupils, who may now be said to have acquired the elementary grounding in the mother tongue, receive instruction in such subjects as geography, history, etc., in the same way as they would if they were hearing children attending the ordinary elementary school, the only difference being that progress is somewhat slower, and more repetition and explanation has to be resorted to. It is to be noticed that in this upper department the teachers teach subjects rather than classes—*i. e.*, one teacher takes the whole of the classes in geography, another history, a third arithmetic, and so on. This plan is found to work extremely well, the teachers being spe-

cialists in their subject, know it better than the average teacher of all subjects can be expected to do, and the plan has the added advantage that the pupils get practice in reading the lips of more than one teacher.

It would be too great a task to describe in detail all that was seen during our six days' stay in this interesting establishment.

One more interesting fact must, however, be recorded—the case of a deaf teacher successfully conducting an oral class—a unique instance one would imagine, but one which it is to be hoped will be imitated by many other ambitious deaf men and women.

In concluding this too brief notice of this well-managed and well-conducted institution, mention may be made of the fact that the chapel and collective exercises are all conducted orally. I was asked to give a short address to the pupils, which I did, speaking as naturally as possible under the circumstances. The pupils seemed to follow with interest, but it may be permitted to doubt whether all really comprehended what was being said to them. In any case, the strain on their eyesight must be very great, and, speaking for myself, and with no wish to minimize the value of the great work that is being done, I still think the manual alphabet would be a useful adjunct in such a case.

MISS GARRETT'S HOME FOR LITTLE DEAF CHILDREN, BALA.

I spent the concluding day of my stay at Philadelphia in visiting this interesting establishment. The Home was founded by two sisters, Misses Garrett, and is still carried on by the survivor. The fundamental idea underlying this effort is that if you begin talking to your deaf child young enough, he will learn to speak and read the lips as naturally through the eye as a hearing child does through the ear. The proper place for the deaf child to learn this is at home, but as the parents of the deaf children have, as a rule, neither the time nor the knowledge necessary to impart this instruction to their offspring, Miss Garrett has hit upon the expedient of taking the children at as early an age as she can get them and training them by skilled teachers in small homes, approximately as nearly as can be to the homes from which such children come. Miss Garrett maintains that if deaf children are put under training young enough and talked to constantly, they will be able by the time they are ten or twelve years of age to go to the school for hearing children and take their places along with their hearing brothers and sisters. Her "Homes" consist of two houses located at Bala, a suburb of Philadelphia. Here she has collected some 60 children of ages ranging from 2 to 12. Her success in getting her pupils to talk is considerable, but it is open to grave doubt whether the system is suitable for more than a very small minority of the Deaf. That some of the more highly gifted ones may be able to take their places in a school for the hearing, after receiving such training as is given here, I do not doubt; but I do doubt the wisdom of reasoning from the few

to the many, and I am of opinion that special teaching in special schools must still remain a necessity of the case for the great majority of deaf children.

Western New York Institution for the Deaf and Dumb, Rochester.

This institution is conducted on a method differing from those previously visited. Signs or gestures are rigidly excluded, and the pupils are talked to from the day they commence school by means of the finger alphabet (single hand). At the same time oral work is commenced, and all the pupils are taught to speak. The method is therefore termed oro-manual. The principal (Dr. Westerfelt) prides himself on the rapidity of his finger-spelling, and he claims that by his method the pupils learn to understand and to use the language of their country in the natural way, with ease and fluency. The result is certainly remarkable. The pupils do use English and they do not use signs, and, as far as it was possible to judge during the short stay made, there is much to be said in favor of this method. The institution is divided into two parts, a kindergarten and an advanced department. There is an excellent library and reading-room attached to the school, and the pupils seem to make a very good use of it. The pupils are allowed to read at meals, and many of them were found reading standard authors with evident zest and enjoyment. It has to be remembered that they are much older than the pupils of our British institutions. The pupils assemble for an hour-and-a-half's evening study in the dining-hall. At meals the boys and girls sit together at the same table, each table being in charge of an elder boy and girl—the girl at one end of the table and the boy at the other. The principal thinks that this arrangement works well and produces no evil results. Another arrangement at this institution which is uncommon is that of the pupils taking their places in the dining-hall every morning at twenty minutes to seven for Bible study—breakfast being served at seven. In this and other ways, though the school is large, a family atmosphere is engendered which helps to break down the cast-iron discipline which exists in many large institutions.

Institution for the Deaf and Dumb, Belleville, Ontario.

This was the only Canadian institution I was able to visit. It is situated in a charming place on the beautiful Bay of Quinte, and is attended by over 200 pupils. The system of instruction is nominally combined, but little real oral work has been done. The classes are too large and the grading of the pupils not quite so thorough as it might be. A new superintendent has been appointed recently, a medical man, who has no previous experience of the work of educating the deaf. He is, however, an able man, full of sympathy for the teachers and pupils, and there is evidence that under his supervision much more oral work will be attempted in the future.

The school course at present allowed by the Government, seven years, is too short and should be lengthened if a really satisfactory result is to be achieved. Much good work has been done by individual teachers, but, with a larger staff, an extended course, and a unification of effort, the results should be much better.

Horace Mann School for the Deaf, Boston.

This is a day school and is carried on as part of the Public School System of Boston. The number of pupils is 145. As many of the pupils have to travel a considerable distance, they generally bring lunch with them, but there is a kitchen in the school building where those pupils who wish it can get lunch for 5 cents or a cup of chocolate for 2 cents.

The method of instruction is oral, and the principal, Miss Fuller, aims at preparing the pupils to attain the standard of work which is reached in the schools for hearing children. The compulsory age of attendance begins at five years, but this law is not altogether strictly enforced with the deaf. Miss Fuller is of opinion that an average deaf child who begins school at five will be about 3 years behind the normal hearing child in attainments when he leaves school. The school is well planned, the curriculum well graded, and the staff capable and ample. A feature worthy of imitation is the employment of a special teacher of speech, whose duty it is to give special drill in this branch, supplementary to the work done by the regular class teacher. For helping the intonation of the pupils, a piano is used, the pupils placing their hands on the frame while a tune is being played. This exercise seems to give pleasure to many of the pupils, especially the semi-deaf, whose lethargic faculties are considerably aroused thereby. The special teacher also makes use of a variety of ingenious devices for improving the articulation of the pupils. One of the drawbacks to success in this school is irregularity of attendance, due to the distance the pupils have to travel daily. On the day of my visit, out of a class of eight first year's pupils, four were absent owing to the weather conditions. This is, of course, one of the disadvantages of the day-school system. The manual training scheme of this school is entirely based on educational lines and is very thorough. Trades, as such, are not taught. A very useful adjunct to the school, though not officially connected with it, is the Home for Little Children at West Medford, a suburb of Boston. Here children under five are received and given an excellent kindergarten training under ideal conditions. As a preparation for the special school, this training is indeed excellent and much to be commended.

Clarke School for the Deaf, Northampton, Mass.; Principal, Miss Yale.

This is the model oral school of America, if not of the world. It consists of about 150 pupils who reside in halls, named respectively

Dudley, Baker, Rogers, and Clarke Hall, all situated on the top of Round Hill, in the suburbs of Northampton, in the midst of Sylvan scenery so attractive that it was formerly the chosen home of the celebrated Swedish songstress, Jenny Lind. There are not more than fifty pupils in each home, and the life they lead is made to approximate as closely to the family ideal as possible. The principal, the teachers, and the pupils all take their meals together, and the practice of speech is inculcated therefore both in school and out. As at Rochester, the pupils are allowed to bring books or papers to the table, and the principal thinks the practice has been beneficial, though it contravenes the canons of good behavior as generally received.

The school is divided into three departments, as at Philadelphia, and the scheme of work pursued is very similar to that of the larger institution. The first class seen was one of babies under five. It numbered nine in all, of varying nationalities, and had only been half a year under instruction. The children had already learned to speak and lip-read the names of a considerable number of objects, etc. The school hours of this class are 9 to 11 and 1.30 to 3. The next class, 10 in number, had been 5½ months in the class, but four of them had spent some time in the babies' class of the preceding year. Their vocabulary, all spoken, of course, extended to about 400 words. There is no set program, words being given to the things which interest the children as they arise, but the words learned are afterwards classified, and at the end of the session a review of the year's work is hektographed and a copy given to each pupil to take home. This practice is pursued all through the school course and proves very useful.

The sentence forms learned in this class are chiefly cast in the past tense, which is the first tense taught. For developing the idea of past, present, and future, calendar work is much relied on, and certainly gives precision to the pupils' knowledge of such terms as today, tomorrow, yesterday, etc.

Note may here be made that the style of writing taught in this school is semi-vertical and came as a welcome relief after witnessing so much poor writing, due to the back-handed effects of the vertical style commonly taught. The writing generally in the American schools was poor, often almost illegible and difficult to read.

In the second year's class of this department an illustration of the method of story telling was shown. The story chosen, a simple one, suited to the stage of development of the class, was told orally. The children were then required to produce it in writing, or to recite orally, what they could remember of it, after which they were questioned upon it. This plan of story-telling is also followed in the higher classes—the length of the story and the difficulty of the language being gradually increased. A variation of the method of presenting it to the children is to write it on a cardboard with a rubber pen. The card is hung up in front of the class for a short time—two, three, or five minutes—during which they silently peruse

it. Then the card is covered and the pupils questioned on what they have read. As a training in concentrating attention and strengthening word memory, this plan has many merits.

The first class seen in the intermediate department (third school year) was occupied with a geography lesson. The method followed is to begin by making a plan of the class-room, then of the school generally, the grounds, the city, the district, and so on to the county, province, and country, the pupils building up their own maps. Picture post cards and the famous Perry pictures are much used for illustrating points outwith the pupils' ken. At the end of the session a copy of the ground covered is given to every pupil, and so the teacher of the following year knows exactly what has been done in the preceding year and what the pupils should be expected to know.

The action work in this stage comprises drill in such sentences as "Miss Dash shook hands with Mary and asked her how she felt, and Mary told her that she was all right." "Miss Dash looked out of the window and asked us what we thought we saw," etc. The action is done, described orally by the child, with help from the teacher when necessary, then written out. Drill on the active and passive form of the verb is also given at this stage (fourth school year); the sentences all based on action work.

As affording material for nature study, a white rat, two turtles, gold fish, a canary, some cocoons, and boxes of seeds germinating are kept in this room.

The top class in this department (fifth school year) was seen engaged in what is called a word-finding competition. A newspaper called "Current Events" is taken; out of it 20 names of places mentioned in it are selected by the teacher and dictated to the pupils, who are required, as part of their evening study, to find out all they can about them (this presupposes free access to a well-equipped library). Next day the teacher questions the pupils on the result of their researches. In addition to the value of this practice in accustoming the pupils to search for information for themselves, it is the means of enabling them to accumulate a mass of information on all kinds of topics.

In the teaching of History, which is begun here, the method is to make use of birthdays: Washington's birthday, Lincoln's birthday being made the occasion on which to present the story of Washington or of Lincoln. As the stories grow in number, they are regulated to their place in chronology by means of a century table, thus:

1700.	1800.
Washington.	Lincoln.

In arithmetic the four processes in money, weights, and measures are mastered.

In the grammar or highest department was seen the finished product of the school. The arithmetic class was doing algebraic problems, involving equations such as "Six times a certain number diminished by 3 times itself equals 63. What is the number?"

A class in English literature (numbering 3 only) was studying "Paradise Lost." They gave a Résumé of English History from Cæsar to the Revolution by word of mouth as rapidly as any hearing class could do. The first class in history was studying the "French Revolution" out of a text-book of some 700 pages, the particular lesson on which they were engaged at the time of my visit being the "States General." They manifested an interest and knowledge in political questions which would do credit to any hearing scholars.

The manual training work at this school is chiefly confined to Sloyd woodwork and carpentry. The Sloyd classes are taught by a lady, but the carpentry is taught by a man (almost the only male admitted into this Adamless Eden). A feature of the work in the carpenter's shop which is worth noting is that the big boys are allowed, in the second half of the term, to make things for their own use or to take home with them as presents to their relatives.

There is an excellent gymnasium, a separate building, the teacher of gymnastics both to boys and girls being a lady. The girls excel in the game of basket-ball, and gave a team of hearing girls a sound drubbing on the day of my visit.

A number of students are trained at this establishment for the work of teaching of the deaf. The course is systematic and thorough, and the estimation in which the Clarke trained oral teachers are held in the schools of America proves its value. In fact, the organization and tone of the whole school is such that residence in it is a stimulus and an inspiration, and though the cost per head is large (about £70 or over), yet in a country where dollars are plentiful, the result is well worth the money expended. In situation, in organization, in all that makes for the healthy development of the deaf child, this institution comes as near to ideal conditions as it is possible for any human institution to approach.

The American School for the Deaf, Hartford, Conn.

Principal, Dr. Job Williams. Number of pupils, about 170. This institution possesses a special interest in that it is the first public school for the deaf which was opened in America. Its original title, "The American Asylum" for the Deaf and Dumb, suggests some curious reflections. The idea that deaf mutes are little better than lunatics and need the care of an "asylum" is not yet quite banished from the popular mind. On the other hand, the promoters of this enterprise seem to have had little faith in the future of their country if they thought, as the title seems to indicate, that one institution

would suffice for the American continent. Needless to say there have been many startling developments since they opened, with fear and trembling, their little school of 7 pupils in 1817; and great, no doubt, would be their astonishment could they revisit this mortal sphere and see how great a tree their little sapling has grown.

The first principal of this school was, as every one knows, the Rev. T. H. Gallaudet—a man of liberal education, broad culture, and rare tact. He laid the foundations of what has often been called the American Combined System of Instruction, a system of which his no less distinguished son, Dr. E. M. Gallaudet, is today the eloquent exponent. Many modifications, however, have been made from time to time, and it is not easy now to find what is really the American system, so varied and so diverse are the methods employed in the various schools. The old order changeth, giving place to the new, in deaf-mute education, as in all mundane affairs.

The method introduced into America by the elder Gallaudet was the French system of de l'Epée and Sicard. "The process used in teaching language on this method was a very cumbersome one. The idea to be turned into language was first given by natural signs, next in word-signs in the order of the words, and, lastly, by signs in the order of the words, each word being accompanied by other signs indicating the parts of speech and giving its grammatical construction. After all this preparation came the written language for the idea." The end sought was to lay up knowledge in the sign language rather than to master the language of the country. The justification for this course of procedure lay in the fact that in those days many of the pupils were allowed to stay only two years at school, and four were thought by many a pretty considerable time for completing their education.

America has traveled far since then, and the American "Asylum" has traveled also. "Massachusetts now allows ten years' schooling to every one of her deaf children, and gives power to the governor to extend the time beyond that limit in the case of meritorious pupils." This rule holds also in most of the New England States. The "asylum" has become a "school," and the method, though still combined or eclectic, now places the teaching of writing, speech, lip-reading, and manual spelling in the forefront, and relegates signs and the sign-language to a subsidiary place. The school at Hartford now consists of two departments—a primary, housed in a separate building, which is practically an oral school, and an advanced department, located in the old Asylum building, where the method pursued is in reality the sign and manual method, plus a certain amount of oral teaching. The work in the oral school follows closely the lines common to all such schools and calls for no particular comment. The result varies with the aptitude of the pupil and the skill and enthusiasm of the teacher. In the advanced department some very advanced work is done. A seventh-year class of nine pupils, of ages averaging from 13 to 15, had completed the study of Montgomery's U. S. History, had begun English history, and were

studying Fryes' Grammar School Geography and Nicol's No. 4 Arithmetic. The teacher of this class has an ingenious plan for stimulating activity. She keeps a number of interesting books on her desk and allows the pupils who finish their work ahead of the rest to take a book and read. The privilege is highly valued and proves a good stimulant.

In the next highest class the subjects of study are Jenkins' Words and Phrases (an admirable collection of idioms and sentences); English and American Literature Primer; Collier's Junior English History; Nicol's Arithmetic, Book 5; Thirty Poems.

The highest class, under Dr. Fay, was taking a course of English literature, a course in physiology, and Jenkins' Words and Phrases. This class wrote out for me, in very creditable English, an address which I had made the previous day and which had been "signed" to them by one of the teachers. As it is a matter of some dispute amongst teachers as to how far the deaf understand a discourse which is delivered to them by signs alone, I take this opportunity of saying that the test thus given proved conclusively that the deaf do follow the meaning of what is said to them by signs. The reproduction of my address in written English by this class was quite as good as would have been, say, the report of a Sunday's sermon by an average hearing congregation.

There is a well-equipped trades building attached to this institution. The sewing class for the girls is in charge of a deaf woman, who reads the lips very well. The Sloyd work is taught by a woman teacher; but the cabinet shop is in charge of a man, a skilled artisan, under whose care the pupils turn out some excellent specimens of the cabinet-maker's art.

I have already referred to the many excellent special text-books which have been issued from this school, copies of which were generously given me by the venerable principal. Chief amongst them are Miss Sweet's "Lessons in English," which are extensively used in America and which deserve to be introduced into this country. Though they contain certain Americanisms which are not quite agreeable to British ears, yet, till we are in a position to print special reading-books of our own, Miss Sweet's lessons would undoubtedly be useful to the class teacher, who finds in the ordinary Standard Readers idioms much too involved for the elementary stages of a school for the deaf.

It is one of the glories of the Hartford School that the quality of its teachers has ever been of a high order. "Twenty-nine graduates of Yale College, besides graduates of other colleges, have been enrolled in its corps of instructors." As one of its reports justly claims: "The high standard set for the country at the beginning, and the endeavor to live up to it, have secured results in the education of deaf mutes which have caused American schools for the deaf to be universally acknowledged to be the best of their kind in the world." That this is no idle boast the records of the past and the quality of the instruction given throughout America today abundantly proves.

Conclusion.

My visitation of the American schools terminated here, and, perhaps, it would be wiser if my remarks also were to end. But I feel that my fellow-teachers and others have a right to know exactly what are the conclusions that I have arrived at on certain controverted points. In stating my opinions I lay no claim to infallibility. I only ask those who may disagree with me, or whose mode of procedure I seem to criticise, to believe that mine are honest opinions, frankly expressed, with no thought but of sympathy and admiration for the noble work which is being done all over America, as opportunity offers, by an army of skilled and enthusiastic teachers—men and women whose very enthusiasm it is which occasionally carries them into what appears to a dispassionate observer as extravagance of statement, and sets them into conflict with one another.

The deaf of America have had in the past, and have at the present day, much better opportunities of obtaining a good education than have the deaf of our own country. The parent of a deaf child there can claim education and maintenance of his child *as a right,* and that without any haggling with the school board as to whether he shall pay 6d. or 1/- per week for his son's bread and cheese.

The school period is longer, the pupils remain at school till a more mature age, and the schools are better staffed and better equipped than our own. As a consequence, the finished product excels that of our schools in knowledge and culture, though there is this to be said, *per contra,* that in ability to use the mother tongue for the ordinary purposes of life there are numbers of deaf mutes in this country who can equal anything that the American schools have produced. Moreover, since the passing of the Blind and Deaf Act, which has made the education of the deaf compulsory in Great Britain, it is well known that we have progressed very greatly, and, as far as I am competent to judge, the work of our best schools now compares not unfavorably, year for year, with the majority of the American ones. But the longer school period, and the greater age to which so many remain at school in America, and, above all, the stimulating influence of Gallaudet College, all combine to enable the *elite* of the American deaf to undertake studies which our deaf mutes in this country scarcely yet dream of.

With regard to systems or methods of instruction, I have to say that the more I see, and the wider my experience, the more I become convinced that it is the teacher who makes the success of a method, and that it is not the dry bones of a method that makes the teacher.

During my tour I saw good work being done on the oral method, on the sign and manual method, on the combined method. I met ex-pupils who had been taught by each and every method, and I found failures and successes alike common to each. If the teacher is skilful and enthusiastic and has good material to work on, he gets good results, whether he is an oralist or not. But certain definite

principles seem to emerge from what was seen and heard, and these may be briefly and concisely stated.

It is generally conceded now that every deaf child should, as far as possible, learn to speak. There are, it is true, stout opponents of this theory—men who believe and say that the indistinct, harsh, and raucous utterance of many deaf people who have been taught orally is useless, and that such would do better to keep an eternal silence, and trust for the expression of their ideas to the nimble fingers or the ready note-book. For this latter view I think there is something to be said. Extensive commingling and communing with the adult deaf and dumb has given me considerable insight into their feelings and opinions on this matter, and I think they should have some weight.

But it has also to be admitted by any candid observer that there are many deaf mutes who can be taught, and well taught, by and through speech, and for whom therefore an oral method is to be preferred. My observations have convinced me that if it is desired to educate a child well on this method, he must live in an oral atmosphere and no pains must be spared to get him to use his voice the livelong day. The teaching of speech as an accomplishment is, I think, a mistake, at least from the oral point of view, and leads in the end to the complete overpowering of the speech method by the more facile and easy manual method. It follows, therefore, that, in my judgment, wherever possible, a dual system should obtain, if full justice is to be done to both methods and to all the deaf. Every school of sufficient size to admit of classification should have two departments—an oral, where the "atmosphere" should be one of speech, and a silent, where finger spelling should take the place of speech. Circumstances, such as scarcity of means, may prevent this being done in the schools of our country at present, but that some such arrangement will be the ultimate outcome of the war of systems I have not the least doubt.

A COMMUNICATION.

BEINN BHREAGH, NEAR BADDECK, NOVA SCOTIA,
December 16, 1907.

To the Editor of the Association Review:

DEAR SIR: I take issue with Mr. Weston Jenkins' statement, as copied in your December issue from the Messenger, that—

"Dr. Crouter has had his share of mere luck, too." . . . For . . . "he did not select his superior officers, the members of the Board of Directors. . . . At Mt. Airy, on the contrary, you find one Director erecting a costly building for the school at his own expense, another contributing to the school paper, for the pleasure and profit of the pupils, a series of interesting studies of English History illustrated with rare cuts from his private library. And all of them giving their time and thought freely to the school with no thought but the benefit of the pupils. This is sheer good luck to the school and to Dr. Crouter, and he deserves no bit of credit therefor—except so far as their generosity has been encouraged by the spectacle of his own untiring and skillful work."

I cannot agree with Mr. Jenkins that this is "mere luck." On the contrary, I think the "generosity" of the Directors goes pretty nearly as much to Dr. Crouter's personal "credit" as the "good work" of the teachers.

There is nothing so stimulating to interest, and, therefore, to generosity, as the spectacle of a man genuinely interested in his work and successful in executing it, and nothing so discouraging as meeting lack of care and of executive ability in the responsible head of an institution in which one has some concern as Director or member of the Board of Managers. I doubt exceedingly whether one Director would have erected the costly building or another contributed the studies of English History from his own library but for the confidence Dr. Crouter has inspired in them that the building and the series would be wisely used and made of great benefit to the students. And I feel sure that "all of them give their time and thought freely to the school" from the enthusiasm inspired in them by Dr. Crouter's own enthusiasm and devotion. Consequently, it does not seem to me that it is "sheer good luck" that Dr. Crouter has such an efficient Board of Managers behind him; but, on the contrary, that Dr. Crouter does deserve at least a very great share of credit therefor. Yours truly,

MABEL G. BELL.

THE CHEFOO SCHOOL FOR THE DEAF AND ITS FUTURE.

SCHOOL FOR THE DEAF, CHEFOO, CHINA,
December 7, 1907.

MR. FRANK W. BOOTH,
Editor of the Association Review.

DEAR MR. BOOTH: I have asked Dr. Brown, of the Presbyterian Mission Board, to forward to you the copy of the paper prepared for the Executive Committee of the Educational Association of China, in regard to the School for the Deaf here in Chefoo.

This Committee, which has its headquarters in Shanghai, is gathering information for the use of the Committee of the Laymen's Movement to Promote Christian Education in China. You may know something of this movement in America, in which some of our wealthiest men are interested.

I sent the copy of the paper to Dr. Brown simply to keep the Board in touch with what we are doing here, and he is to send it on to you.

At the Centenary Missionary Conference held last April in Shanghai there were several visiting delegates who represented the Laymen's Movement; some of whom I had the pleasure of meeting. A number of them saw the class of deaf boys which I had with me and which did daily demonstration work in the Presbyterian Chapel near the Y. M. C. A. building, where the Conference meetings were held. Later, Mr. Louis H. Severance, of Cleveland, visited Chefoo, and, although it was holiday time, I called together the pupils who were remaining with us during the summer and he was much interested in seeing what they had accomplished. It was his pleasure to remember us with a gift; but I met in him, what I meet in so many and which is so baffling, the strong feeling that the work is not on a permanent basis. We have no Board, except the one which simply holds the property in trust, but is not responsible for the finances nor the continuity of the work; hence, we cannot expect large gifts and must work facing the inevitable outcome of failure for lack of supporters. Mr. Severance quoted the history of the McCall Mission in Paris as an example. I need hardly add to

his opinion the fact that I, myself, feel the burden of uncertain support a very heavy one, and I have often wondered if the struggle I am making is worth the while. One hour in the school-rooms, though, watching the development of minds, which but for this school would be left in worse than heathen darkness, arouses my determination to hold on, no matter what the cost.

To secure a more adequate and certain support and the continuity of the work are things to which we must give some attention.

It is this which has led us to ask for an endowment. We have proved our right to live as an institution by the degree of success attained under difficulties, and it seems that the time has come when we should make a strong effort toward something more permanent.

The paper will give you, and the readers of the ASSOCIATION REVIEW, some idea of what we have accomplished in getting together property for the use of the school and should be an encouragement to do more.

The Committee to whom the paper was sent did not intend to include any but secondary schools, but gave us the advantage as a recognition of the worth and need of the work. I am rather pessimistic as to any advantage, *unless* it is taken up by interested people at home and pushed from that end. Hundreds of papers have been sent to the Committee from schools which have wide-awake, energetic men at the head of them ready to push their claims. I fear our little silent corner will be quite overlooked unless we have "a friend at court" to speak for us. It would seem an opportune time for the profession, which is devoted to the interests of the deaf in Christian lands, to unitedly approach the Committee of the Laymen's Movement with some proposition on behalf of work for the deaf in this great land. Could this be done something might come of it, but it means some personal work on the part of the leaders.

With an endowment of fifty thousand dollars, U. S. currency, well invested; with a Christian Endeavor or Missionary Society in every institution in America and Great Britain, pledged to such a yearly contribution as would not be a great burden; with the hearty sympathy of all teachers of the deaf, we could go on with the work and keep before this people a beautiful example of what Christian lands do for their unfortunate children, until such time as they are ready to assume the responsibility themselves. They are becoming increasingly interested and plans are being made looking to the opening of schools in Peking and Shanghai which shall be supported by the Chinese.

The coming of 1908 will mark a mile stone in the life of the Chefoo School and close its first decade of work as an independent mission. It would seem a fitting time to place it on a better financial basis than the present uncertain one. Recommending it, therefore, to your consideration, and through the pages of the REVIEW to the profession, to the friends of the deaf, and to the deaf themselves, I remain, dear Mr. Booth,

Yours, in His name, for the deaf of China,

ANNETTA T. MILLS.

[The following is the paper, referred to by Mrs. Mills, forwarded to us by the Board of Foreign Missions in New York. It is a full and a most interesting statement of the present condition and resources of the Chefoo School for the Deaf and of its immediate and pressing needs. The statement will be welcomed by the friends and supporters of the school throughout the country as affording them a clear view of the present situation and as pointing the way for further action on their part in the sustenance and enlargement of the great work that the school is carrying on.—EDITOR REVIEW.]

SCHOOL FOR THE DEAF, CHEFOO, CHINA,
September 24, 1907.

F. CLEMENT COOPER,
Secretary of the General Board of Education,
St. John's University, Shanghai, China.

DEAR SIR: In accordance with the circular issued by the Board, of which you are secretary, we send the following in regard to the School for the Deaf at Chefoo and its claim to consideration by the General Board of Education and its presentation to the philanthropic laymen of America and England:

(1) The estimated value of our educational plant is (Mexican) $14,300.00

(*a*) Amount and value of land:
Seventeen and one-half acres, cost price..... 3,000.00
Present value, about..... 5,000.00

(*b*) Number, nature, and value of buildings, three buildings:
(1) One, originally built for the boys' school, now occupied partly by the missionary in charge and partly as a dormitory, value... $5,500.00
(2) A building of four small rooms, now used as school-rooms, but built as a dwelling-house; unsuitable for present use, value... 1,000.00
(3) Kitchen, servants' rooms, and outbuildings, value 1,500.00

(*c*) Number and value of residences for foreign teachers:
At present there is no building for the foreign teachers in charge, a part of that intended for the boys' school being in use.

(*d*) Amount, nature, and value of equipment, apparatus, libraries, etc. Equipment consists of:

(1) Phonetic Charts, covering the whole syllabary.

(2) Pictorial Charts, compiled and made at the school (these were given a gold medal at the St. Louis Exposition), value..... $300.00

(3) Visible Speech Charts, Bell's, adapted to the Chinese, value..... 100.00

(4) Graded lessons, a set of four books printed from blocks, value..... 500.00

(5) Photographic outfit, value..... 200.00

(6) Furniture for school use, etc., value..... 150.00

(7) Books for use and library, maps and globe, value 50.00

(*e*) Amount of endowment:
None at present, but it is desired to have one of $50,000.00. $1,000.00 gold is promised if we can get the other $49,000.00. There is also $500.00 (Mexican) toward this on interest at 7½ per cent.

(2) What is your present teaching staff (foreign and Chinese)?

Foreign, two women—Mrs. A. T. Mills and Miss A. E. Carter; native, three male teachers, two of whom we expect to send out to take charge of branch schools and one woman for the girls' school.

(3) Has your Mission decided upon any definite policy with regard to your educational work? If so, what?

Not being connected with any Mission, we have, in the main, adopted the policy of schools for the Deaf in Christian lands, viz:

(*a*) To give the deaf a using knowledge of language, through which a saving knowledge of the Christian religion can be taught.

(*b*) A trade or craft given them by which they can earn a living.

(*c*) The training of hearing native teachers who can extend the work into other parts of the land; also, such as are suitable among the deaf pupils to be trained as their assistants. It is our hope to see a school started in every province, and where desired to place a trained teacher in charge of a class in connection with already existing Christian schools for the hearing.

(4) During the next ten years by how many do you wish to increase your foreign staff? What sum would be necessary for their salaries?

We hope to increase our foreign staff by the addition of three foreign teachers—one a teacher of trades; also, a matron, making four in all, with the average salary of $700.00 gold, each; $2,800.00 of an increase over the present expenditure.

(5) What estimates have you made under the following heads?

(*a*) Building for a girls' school (we have the land), (Mexican) $4,000.00

(*b*) Erection of a suitable building for the boys' recitation and study rooms, to replace the present inadequate ones..... 5,000.00

(*c*) Teachers' rooms, servants' quarters, and out-buildings must follow soon..... 3,000.00

(*d*) An addition to the present building to make it a suitable dwelling for the one in charge..... 2,500.00

(*e*) Outfit and furniture. A small printing outfit.. 500.00

This is needed for two reasons:

(1) To fit a few boys as type-setters.

(2) To print information and lessons.

(6) Do you desire to secure an endowment fund, and if so, at what figure do you put it?

In order to secure the continuity of the work it would seem best to have an endowment which we would place at $50,000.00 gold; some promises have already been made toward this, notably $1,000.00 from Dr. Alex. Graham Bell, of Washington, D. C., in case the rest is raised.

Further Remarks.

The school for the deaf at Chefoo has an attendance of twenty-one boys and we are just opening a department for girls with eleven pupils promised as soon as they can have suitable escort for their journey here. Some of them come long distances and represent seven out of eighteen provinces of China.

The number of deaf and dumb probably averages one to every five hundred of the population, which would justify some outlay by the Christian church for them, not merely in the name of humanity but as an object lesson to this people.

They are the only people in the world who cannot know the gospel without first being given a means of understanding language, which can only be given to them in schools. They are in fact the only class who are entirely dependent on schools for their knowledge of

Christ, and work for them is as beautiful an example of the love of Christ as hospitals and dispensaries, and schools for the blind. They become, when educated, law abiding and useful members of society and it pays morally and intellectually and financially to educate them.

Believing that something should be done for the thousands of deaf and dumb in China, Mrs. Mills left the care of the Presbyterian Board, not because the members of that board did not approve of work for the deaf, but because they had not the money to give to it; believing, also, that God never providentially prepared a worker without providing the tools for her work, she has held on when the way seemed difficult, believing further, that Christ died for the deaf and dumb, and that we, following His example, should give them the gospel, she has, therefore, given her life to this work.

The school which was established in faith, owes its inception and continuance to the deaf of Christian lands assisted by philanthropic friends. In some instances pastors and clergymen, settled over churches for the deaf, have interested their flocks who, knowing the great privation of deafness and the blessings of an education, have held entertainments and sales for the benefit of their heathen brothers and sisters, often giving generously of their time and means. Great praise is due to them and to their leaders for what their efforts have enabled us to accomplish.

In a number of the schools for the deaf, Christian Endeavor or Missionary Societies have been formed and yearly gifts sent. The first to do this in America was the school in Rochester, New York, U. S. A., and in Great Britain, the deaf of Belfast and Edinburgh. Interest in these centers for the deaf is increasing, fostered by those in charge of their training, realizing that they have a right to be taught, as are little hearing children in Sunday schools, to help their less fortunate brothers and sisters "for Jesus' sake."

We have now come to the time when the school is attracting the attention of the Chinese officials, who are talking of opening similar schools in large centers, using teachers trained by us, and it devolves upon us to give them a good model, and for this our present support is inadequate. The school needs friends who will be responsible for its support, thus relieving Mrs. Mills of the necessity of giving her time and strength, which should be entirely devoted to the teaching and the training of native teachers, to that of raising funds.

Different associations formed in the interests of the deaf in the U. S. and in Great Britain have taken up the matter and much help may be expected from them, but the point has been reached when

the interest already aroused should be crystallized into a strong working contingent, and for this is needed friends who will help us to bear the burden.

The property accumulated from gifts by Mrs. Mills for the use of the school is held in trust by a local board of trustees.

The above are some of the reasons why we make bold to press the claims of the Chinese deaf and dumb to the attention of the philanthropic people of America and England, praying that they will help us to make this work, humanly speaking, a permanent monument to Him who said "Epaphatha."

(Signed) JOHN FOWLER, Con. Gen. M. S.
W. O. ELTERICH, Am. Pres. Mission.
GEORGE CORNWALL, Am. Pres. Mission.
HELEN S. C. NEVIUS, Am. Pres. Miss.
ED. TOMALIN, Chinese Inland Miss.
ANNETTA T. MILLS.

NOTE.—The above were all the members of the Board of Trustees who were at the time in Chefoo.

THE EIGHTEENTH MEETING OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF.

GALLAUDET COLLEGE, WASHINGTON, D. C.,
December 24, 1907.

To the Members of the Convention of American Instructors of the Deaf:

It was decided at your meeting at Morganton to accept the invitation of the authorities of the Utah School for the Deaf and the Blind to hold the next Convention in that Institution.

After conference between the members of the Standing Executive Committee and the Superintendent of the Utah School, it has been decided to invite the members of the Convention to meet at Ogden on the 3d of July next. The Convention will be called to order, at an hour to be decided hereafter, on Saturday, the 4th of July.

It is expected that the members of the Convention will be fully accommodated in the buildings of the Institution or upon its grounds, and a charge of $1.25 per day will be made for board. Superintendent Driggs writes that the Institution will be able to provide rooms in its buildings for about 150 guests, and that it will provide tents upon its spacious lawns for 150 more. He adds that there are a number of excellent hotels in Ogden where members of the Convention may secure good accommodations if they so desire.

Arrangements will undoubtedly be effected for the transportation of members of the Convention at reduced rates, the particulars of which will be published later. All persons availing themselves of these transportation rates and of the special rate for board in the Institution, who are not already members of the Convention but are eligible to membership, will be expected to become members at the Ogden meeting. The conditions of membership are as follows:

"All persons actively engaged in the education of the deaf may enjoy all the rights and privileges of membership in the association on payment of the prescribed fees ($2.00 the first year and $1.00 annually thereafter), and agreeing to the Constitution."

All persons taking advantage of the rates for board or for reduced railroad transportation must either be members of the Convention or pay $2.00 to the Treasurer of the Convention, showing his receipt for the same.

It is expected that the meeting of the Convention will continue for about a week. Superintendent Driggs will act as Local Committee, informing members of the Convention what arrangements he is able to make for transportation and for excursions to points of interest within easy reach of Ogden.

Mr. J. W. Jones, Superintendent of the Ohio Institution, the Chairman of the Committee on the Normal Section, has been appointed Chairman of the Committee on Program. All persons wishing to present papers or subjects for discussion are requested to communicate with Mr. Jones at an early date.

It is important that members of the Convention should inform Mr. Driggs well in advance of the meeting of the Convention of their intention to attend.

With cordial greetings from the Committee to the members of the Convention, and to all engaged in the work of educating the deaf or interested therein, the hope is expressed that the Eighteenth Meeting may be one of more than ordinary interest.

E. M. GALLAUDET,
President of the Convention.

Superintendent Driggs gives additional information as to railroad arrangements as follows:

"The railroad officials write that usually there are very low summer tourist rates from the East to Ogden which will take care of the Convention very nicely. Also that if these rates are not continued for the coming summer, an effort will be made to make a special rate for the Convention itself. In either case we shall prepare a circular with detailed information as soon as we have anything positive, and forward same to all Schools for the Deaf. We have already quite a number of requests for the reservation of tents and rooms, indicating that the Eighteenth Convention will be a big one. If you are coming, please let us know soon. Will you have tent, room, or hotel?"

Superintendent Argo, of the Colorado School, has extended a cordial invitation to members of the Convention to stop off when they reach Colorado Springs and visit his school.

BOOKS, PERIODICALS, AND REPORTS.

THE MECHANISM OF SPEECH. Lectures delivered before the American Association to Promote the Teaching of Speech to the Deaf, to which is appended a paper on Vowel Theories, read before the National Academy of Arts and Sciences. Illustrated with charts and diagrams. By Alexander Graham Bell. Funk & Wagnalls Co., New York. 1907. Second edition, containing Synopsis and Index. $1.20. To be obtained from F. W. Booth, Washington, D. C.

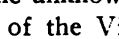
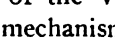
When a capable teacher wishes to create in a pupil's mind the ability to understand a certain subject, she does not commence with an arbitrary statement of the facts or what she thinks about them. On the contrary, she begins at a point relatively far distant, and working gently but surely toward the end she has in view, leads her pupil after her until, by some effort of his own, he arrives at a clear understanding. In the Mechanism of Speech, Dr. Bell, himself the wisest of teachers, follows this natural plan. Originally delivered as lectures before the first Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf, but now issued as an interesting and desirable volume in its second edition, this book is of itself a remarkable illustration of the author's practical methods of instruction. There is an end in view from the very beginning, and the lectures follow each other with entire unity toward that end, while at the same time countless interesting asides occur just as in the lessons of a clever and experienced teacher.

The first thirty-five pages are devoted chiefly to describing the formation and action of the organs of speech, the explanations being varied by many interesting accounts of the surgical operations and unique experiments that Dr. Bell has witnessed. Under the heading, "Methods of Studying the Mechanism of Speech," are gathered the facts concerning articulation which lead us by a regular mental process to understand the importance of "Visible Speech" as an agent in teaching the deaf. For those teachers who, lacking this knowledge, make their classes learn Visible Speech as an abstract subject, without applying it in their work, the book should prove a revelation.

To take one of the instances given of the practical use of the symbols: In teaching a child such a difficult sound as the vowel *oo* in *too,* the teacher has to convey to him the meaning of the three positions of the vocal organs, viz., the labial position, the lingual position, and the laryngeal position. For each of these actions, which in the Roman letter system are designated merely by *oo,* we have in Visible Speech signs that convey to the child just what the teacher wants him to do, the three elementary signs being combined into one symbol which stands as an accurate picture of the vowel itself. "Combinations of positions yield new sounds just as combinations of chemical elements yield new substances." In resolving sounds, by the help of Visible Speech, into their elementary forms, "Visible Speech becomes a symbolical language whereby any imaginable position of the vocal organs may be expressed so as to be understood by the children."

In a book where so much is of importance, it is difficult to select passages, but there are certain paragraphs that might be printed in italics, so replete are they with forcible and suggestive ideas.

"It does not matter what sound you get from a child, so long as you get a sound. The plan is to follow the child up and symbolize the different sounds made, and get him to remember and repeat the varieties that occur. I go from the known to the unknown. The queer sounds that children make are the known sounds to them, and the English sounds the unknown."

The chief value of the Visible Speech symbols "lies in their ability to express the mechanism of the sounds the children make so as to show in a graphical manner their relation to the English sounds we wish them to give." Without the use of symbols it is difficult to explain to a deaf child the nature of certain defects, such as a faulty rendering of the *tn* in "cotton"—a vocalization of the puff of air after the *t; i. e.,*  for  .

Dr. Bell's criticism of what he calls the "No-no method" of teaching is worthy of grave attention. "The first step in the correction of a defect is to study the mechanism of the defective sound. Imitate the defective sound yourself, and then study your own vocal organs. With this knowledge the teacher can not only devise means (1) of correcting the defect, but (2) of utilizing it in the production of other sounds." And on an earlier page he says, "Learning to speak is like learning to shoot. Now, suppose you aim at a target for the first time, and fail to hit it, and you are simply told, 'No, no; that's not right. Try again!' Well, suppose you do try again.

The chances are that you fail, and if you were simply told once more that you didn't hit the bull's-eye, you are no further advanced than you were before. That's not the way to learn to shoot. You must know *where your bullet struck when you failed,* so as to see the relation between the point struck and the point you intended to hit. . . . The No-no method, besides discouraging the beginner, fails to give the very information that is necessary for his progress. The deaf child must know *what he did when he failed,* and the relation of the position struck to the bull's-eye." And this, let us say, is just what Visible Speech is capable of showing him, graphically and clearly.

From the very beginning the book is full of interesting and valuable suggestions. The Synopsis (prepared by Dr. Bell himself) is of inestimable worth to both the teacher and the ordinary reader, giving, as it does, in a few words, an idea of the subjects touched upon in the lectures, and enabling the reader to refer afterwards to any point he wishes to review. The volume is also completely indexed. Appended to the lectures is a reprint of Dr. Bell's paper on "Vowel Theories." The book is attractively bound, and attention should be called to the superior paper, which is one of the improvements in this second edition.

As an explanation and setting forth of the uses of Visible Speech, the lectures should be read by every one interested in the welfare of the deaf. Articulation teachers, in the midst of the defeats and disappointments, the successes and quiet triumphs of their arduous work, most emphatically should avail themselves of so valuable an instrument as this book, rightly studied, must prove.

HARRIET U. ANDREWS.

PROCEEDINGS OF THE EIGHTH CONVENTION OF THE National Association of the Deaf, held at Norfolk, Va., July 4, 5, and 6, 1907.

This is an excellently printed and carefully edited book of 85 pages, containing the full proceedings of the Convention of the American Deaf, held at Norfolk the past summer. The illustrations in the work are especially fine, and they, with the text, will serve their purpose as a record of what the deaf of this generation are in their leadership, and what they have accomplished and are aiming to accomplish for their own advancement and the good of society at large. Copies of the book can be obtained through the Secretary, W. C. Ritter, Hampton, Va.

PSYCHOLOGICAL BASIS OF THE GERMAN METHOD[1] in the Instruction of the Deaf, and Critical Consideration of the Finger-alphabet and Sign-language. By Friedrich Werner, Director of the Provincial Institution for the Deaf at Stade. Berlin: Reuther and Reichard.

In his introduction Director Werner finds the text for his essay in a quotation from Dr. Stern's "Helen Keller," etc.[2] In this quotation Dr. Stern claims that deaf children cannot learn speech as normal children learn their maternal tongue, in the way of natural conversation coupled with mental assimilation; but that they learn it "as normal persons learn a second language, viz: by constructing it systematically from its elements, passing from sounds to words, inflections and sentences;" that, "for a long time the instruction of the deaf is predominantly a struggle with sounds and articulations, a mechanical drill in positions and movements of the organs of speech, in inspirations and expirations, etc., whose meaning and value are wholly closed to the pupil and which, even when he begins to apprehend them, are not mentally assimilated." The principle "that all learning-to-speak (*Sprechenlernen*) must be a learning-to-speak-and-to-think (*Sprech-Denken-Lernen*)," he claims, "is too much ignored." Thus it happens, according to him, that the precious time used for purely technical drill is irretrievably lost for mental development, and that, in spite of every effort, speech with a considerable number of the deaf fails to become the natural expression of their mental life and that, out of school and after school life, they fall back into gesture and, consequently, into the danger of intellectual stagnation."

Dr. Stern finds a remedy for this in the finger-alphabet, as "a natural connecting link between sign-language and oral-language, which lifts the mind above the level of mimic limitation and prepares in the happiest fashion for the later acquisition of speech. In accordance with the psychological principle that an increase in psychic content does not necessarily imply an increase in psychic labor, that in matters of education the straight road is not always the shortest.

[1] The German or oral method, as contrasted with the French or sign method, was originally distinguished by the mere effort to teach the deaf the art of understanding and using spoken words. Later on, it added the further requirements of excluding the finger-alphabet and of prohibiting, during instruction, the use of gestures peculiar to deaf mutes, and aimed at the entire suppression of gesture-language.

[2] "Helen Keller; the Development and Education of a Blind Deaf-mute as a Psychological, Pedagogical, and Philological Problem." Vol. VIII, No. 2, of Essays bearing on Pedagogical Psychology and Physiology, edited by Prof. Th. Ziegler (Strassburg) and Prof. Th. Ziehen (Berlin).

but that frequently auxiliary activities are indispensable, he finds in the finger-alphabet such an auxiliary activity in the acquisition of oral language, as shown in Helen Keller.

Director Werner attributes "this restlessness and hesitation, this groping and ever renewed experimenting," as instanced to him in Dr. Stern's views, to the fact that "the German method lacks a rational explanation on psychological grounds," and this explanation he proposes to furnish. He proposes to show, "on the basis of experience, that the ability to speak can be attained and, above all, permanently established, only when speech is ever kept in the foreground," and also to prove that the recommendations of Dr. Stern are not practicable. For these purposes he deems it necessary, on the one hand, "to point out clearly and definitely the difficulties and weaknesses of the German method," and, on the other hand, "to take a brief survey of the entire field of the education of deaf-mutes." In this, however, the term "deaf-mute" applies exclusively to those who are afflicted with congenital total deafness, about 50 per cent of those who attend upon instruction.

Director Werner begins his discussion with a sketch of the development of speech with hearing persons, whose thinking is connected with perceptions of sound. The primary activity on the part of the hearing child in acquiring speech is the audible imitation of audible speech. Inaudible thinking is a secondary activity brought about by the inhibition of the organs of articulation. In audible speaking this inhibition is withdrawn.

With civilization or culture, reading and writing are added to hearing and speaking. At first, the pupil finds himself under the necessity of reading aloud, inasmuch as the sound-perceptions with which his thinking is associated can be reproduced only by acoustic word-images. But as corresponding optical centers develop under continued practice, he learns to read inaudibly and, finally, the mere seeing of the words is sufficient.

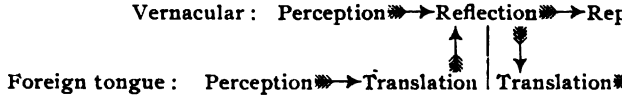
Similarly, in learning to write, the pupil must, at first, give his entire attention to the movements of his hands. In due time, however, motor centers are developed for the coördination of written with audible symbols.

In the subsequent acquisition of a foreign tongue, the hearing pupil, at first, translates the foreign words or sentences into terms of his vernacular in which he thinks; and, *vice versa*, in attempts to express his thoughts in the foreign tongue, he first formulates them in his vernacular and then translates into the foreign terms. In due

time, however, he may enter into the spirit of the foreign idiom and learn to think in its terms.

Much is gained, as experience proves, if the learner is placed in an environment which uses only the new language, inasmuch as the disturbing influence of hearing his vernacular is then excluded. Moreover, the younger the learner, the greater will be the gain on this score. These considerations lead to the conclusion that "the acquirement of a language offers the least difficulty if, in the first place, it is direct and, in the second place, if it takes place as early as possible, when critical reason is not as yet sufficiently developed to hinder the immediate interest in the language which by its musical character appeals more to feeling and memory.

The fact that in the acquisition of a foreign tongue the complete congruence of perception, thinking, and reproduction is impeded in the ratio in which thought or reflection requires translation, Director Werner illustrates as follows:



If we think only in the vernacular, the sound-images of the foreign tongue are not stimulated, partly because of the narrow limits of consciousness, and partly because the succession of words differs in different languages.

Largely on this basis Director Werner looks upon the sign-language of the deaf as the greatest hindrance to the ready development of a word-language. Gesture-language with its descriptive, suggestive, symbolic, and conventional signs is the vernacular of the deaf; it has no grammatical forms; in its syntax it differs totally from the word-language, as it usually begins its sentences and phrases with the most important words [*e. g.*, Father angry—punish—son lazy]. Therefore, a translation from the one into the other encounters the greatest difficulties: "they are to each other as fire and water." In short, they practically exclude each other and, therefore, at least in instruction, the sign-language must yield to the word-language, if the latter is to thrive and become established.

From the standpoint of the deaf, Director Werner justifies their defense of the sign-language, in as much as oral language, which in its origin and establishment depends necessarily on the ability to hear, must ever remain to them something unnatural; indeed, he claims, a sound-language as such is unthinkable to a deaf-mute, could never have been invented by deaf-mutes.

He waives the discussion of the reasons why the deaf are taught to speak, and confines himself to the presentation of proof why the German method must proceed as it does in its effort "to place the deaf in possession of the written and oral forms of the word-language and to make the latter the basis of his thought-life."

Resting on the fact, as proved by experience, that the deaf can learn and use the word-language, he inquires into the psychic factors with which they connect the respective thought-content. These he finds partly, with Wundt, in sensations of motor innervation, partly in contact sensations (as when the tongue touches the palate, etc.), partly in sensations connected with the vibration of the vocal chords, and designates them collectively as SPEECH-SENSATIONS (*Sprechempfindungen*), rejecting the term speech-perceptions, which might easily include perceptions of sounds.

In this connection he notes a significant difficulty that attends the reproduction of speech-sensations when a deaf person attempts to speak, as contrasted with signs, writing, and the finger-alphabet. "With the latter," he writes, "the deaf can control the correctness of his utterances; with speech, however, he is in the truly deplorable condition, in the first place, that he cannot be certain that his speech-movements are correct; and, in the second place, that he cannot himself perceive objectively what he says."

With reference to the further requirement of the German school that the deaf must learn to *read from the lips,* he notes the difficulty that "scarcely one-half of the sounds can be actually read, while the other half must be complemented and inferred by context." Moreover, while "in the oral language of hearing persons, as well as in the sign-language, the finger-alphabet, and the written language of the deaf the communications from others always appear in a form which is congruent with the respective forms of reproduction and thought," the deaf in reading from the lips are under the necessity first of all of reproducing, in addition to the optic word images, the corresponding speech-sensations which besides belong to another sense, the sense of touch. "Only after many repetitions, therefore, will the deaf be able to connect intimately the designated idea with the speech-sensation."

Nevertheless, "since the deaf are subject to the same physiological and psychological laws with the hearing, the assertion is justified that in due time there is established in the deaf a *connection between thinking, reading from the lips, reading, speaking, and writing so intimate* that these activities appear to them as but one common process."

Psychologically, he considers it a significant fact that the deaf, when they speak with each other, do so without voice, since this has no value in reading from the lips. For the perception of their own speaking, too, the tone of voice does not signify, since it is to them merely a vibration of the larynx and the same for all vowels, which are modified in character, not in the larynx, but in the mouth and in the nose.

As to the manner of memorizing given literary pieces, Director Werner notes three stages of development: In the first of these, the pupil memorizes with full articulation; in the second, with voiceless articulation; in the third, with inhibited articulation. The last stage is fully attained by only very few; with the majority some slight movement of the organs of speech remains.

After contrasting in fuller detail the development of speech in the hearing and the deaf, Director Werner concludes this section as follows: "For the hearing, speech is something natural; for the deaf, something unnatural. It is, therefore, wholly erroneous and inadmissible in the instruction of the deaf in speech to seek the ideal in the exact imitation of the language development of the hearing."

The next section is devoted to a specific discussion of Dr. Stern's proposition to postpone instruction in speech to a time when the pupils have acquired, with the help of the finger-alphabet, a greater amount of language material than is now the case.

Director Werner admits that, "considered in itself, the finger-alphabet accords with the nature of the deaf much more fully than speech, more fully than thinking in speech-sensations, since the finger-alphabet not only enables them to test the correctness of their utterances, but is consistent with complete congruence of perception, thinking, and reproduction.

On the other hand, when viewing it in its relation to speech, he finds that, after the introduction of the latter, the deaf will continue to think in the finger-language; that, even when speech sensations have reached a certain autonomy, they will give their chief attention to the finger-language, while the speech-movements will be only latently innervated; and that, consequently, in time these speech-movements—as all voluntarily acquired movements are inclined to do—will become less and less distinct.

Incidentally, he finds that the same difficulties attend the method of basing the first instruction of the deaf upon writing, as defended by Goepfert of Leipsic; and reaches, ultimately, the following conclusion: "*As long as the deaf child shall remain subject to univer-*

sally valid physiological and psychological laws, there will be but one way to teach him to speak permanently, and this the way of the German method, which seeks to make speech-sensations the basis of his thinking."

"The danger-point in both propositions (Dr. Stern's and Goepfert's) *is to be found in the fact that the arguments adduced in their behalf, apart from other considerations,* are correct in claiming that the writing method and the finger-alphabet are actually easier and more convenient for the deaf than the speech method. Nay, it may even be conceded that during the first years of school-life and, perhaps, even at the close of school-life, the deaf, educated after the proposed methods, may be further advanced in language and knowledge than our pupils are at present. Nevertheless, it may be positively maintained that in the course of time their speech will steadily lose in distinctness, and this is the crucial point; *for we sin against the deaf, if we teach him speech, when we know beforehand that he will lose it again.* The correctness of these statements is sustained not only by the history of the education of the deaf, but also by considerations of psychology."

Director Werner in the next section presents "the theoretical foundation of the oral method," with a critical sketch of the history of the oral method in Germany from its introduction by Samuel Heinicke, towards the close of the 18th century, to the present. He deplores the disturbing influence of De l'Epée's artificial sign-language and of the subsequent movement, chiefly identified with the name of Dr. Graser, to instruct the deaf together with the hearing in the common schools. He devotes interesting paragraphs to the discussion of the guiding principles of Moritz Hill (1805-1874), whom he honors as "the Pestalozzi of the instruction of the deaf." Nevertheless, he condemns these principles as erroneous and as hindrances to the further development of the instruction of the deaf.

His arguments in favor of this judgment are clearly indicated in his discussion of the development of speech in the hearing as contrasted with its development in the deaf, sketched above. It will, therefore, be sufficient here to quote Hill's principles. They read as follows:

1. "Since the deaf mute is a human being, he is as such endowed with the same capacities that are found in those in possession of all their senses."

2. "Develop speech in the deaf child, as life develops it in the hearing child."

For this second principle, he would substitute the following: *"Develop speech in the deaf child in such a way that his thinking may as soon as possible be based upon his speech-sensations."* In this principle he finds, in simple and lucid terms, the long needed and sought for psychological basis of the oral method.

The concluding section contains a survey of methods of the instruction of the deaf. These he arranges in two groups as follows:

Group I. *Word-language to be made the mode of thinking and the medium of communication of the deaf:*

A. At first speech alone, later on also writing:
   a. Without finger-alphabet: *Italian Method.*
   b. With finger-alphabet.

B. Speech, together with writing:
   a. Without finger-alphabet: *German Method—Oral Method—Pure Oral Method.*
   b. With finger-alphabet.

C. Written language, with it gradually speech:
   a. Without finger-alphabet (Goepfert's first proposition).
   b. With finger-alphabet: Heidsiek's *Manual-Alphabet-Method,* Goepfert's Method, Dr. Stern's Proposition.

D. Written language only:
   a. Without finger-alphabet.
   b. With finger-alphabet: *Copenhagen Method.*

Group II. *Sign-language to be retained as mode of thought; word-language to become merely the medium of communication with the hearing:*

A. At first speech alone, later on also writing:
   a. Without finger-alphabet.
   b. With finger-alphabet.

B. Speech, together with writing:
   a. Without finger-alphabet: *School of Leipsic* (Reich).
   b. With finger-alphabet: *Early German School.*

C. Written language, with it gradually speech:
   a. Without finger-alphabet.
   b. With finger-alphabet: *Vienna School* (Venus), Heidsiek's *Combined System.*

D. Written language only:
   a. Without finger-alphabet.
   b. With finger-alphabet: Heidsiek's *Manual System, French Method.*

Theoretically Director Werner arranges as most desirable these methods of teaching the deaf in the following order: I A *a*, I B *a*, I D *b*, and II D *b*. In I A *a* the deaf connect their thinking directly with their speech-sensations. This, however, in Germany, owing to the many difficulties which the German language presents in reading from the lips, is there deemed impracticable, hence the German Method adds writing and practices I B *a*. For the inadequately gifted deaf, he is inclined to recommend I D *b*; and only for those of least capacity he would use II D *b*.

As to the struggle for supremacy of the several methods, he does not think that those enumerated in Group II will ever seriously compete with the German method, although the adult deaf-mutes in their congresses energetically favor the combined method under II C *b*. On the other hand, he considers it probable that more serious and persistent rivalry will develop between the German school and the finger-alphabet method (I B *a* and I C *b*), inasmuch as the psychological and practical arguments adduced in favor of the latter are not without force. Hill's principles have no prospect, he holds, to secure victory for the German method; "this can only be achieved by establishing the German method on a psychological basis, on a foundation which will simultaneously justify all the educational measures of the German school.

"However," he concludes, "in our arguments as to method, we should never lose sight of the one fact: *Whilst of all methods the oral method most antagonizes the nature of the deaf-mute, no other method can so effectively restore him to human society.*"

W. N. HAILMANN.

LA VOIX, SA CULTURE PHYSIOLOGIQUE: THEORIE Nouvelle de la Phonation [The Voice, its Physiological Culture: A New Theory of Phonation]. By Pierre Bonnier. Pp. 299. Paris: Felix Alcan, 1907. Price, 3.50 francs.

While this work is in the French language, the illustrations accompanying the text of themselves will prove of sufficient value to justify the addition of the book to the working library of every articulation teacher. In truth, we have never seen pictures and diagrams to approach them in completeness and self-explanatory clearness. It is to be hoped the work may soon have English translation. The following review, which we find in Nature, is from the pen of Prof. J. G. McKendrick, F. R. S., a noted authority and the

doctor who performed the operation upon "the Scotchman at the Glasgow University with a harmonium reed in his throat in place of vocal cords," as referred to by Dr. Bell in his lectures upon "The Mechanism of Speech." The review is here reproduced for the practical thoughts it contains bearing upon our problems of voice production and training in giving speech to the Deaf:

This is an excellent work on the physiology of the voice. Nowhere have we met with a clearer exposition of the anatomical structure of the larynx, the mode of voice production, and the mechanism of breathing. The diagrammatic figures showing the action of the muscles are specially to be commended. The author rightly discredits the old-fashioned view that a vocal tone is produced by the vibrations of the margins of the true vocal cords. In a sense this is true, but it is an incomplete statement of the truth, and M. Bonnier lays stress on the variations of pressure that occur in the laryngeal cavity. The vocal cords are brought close together, and then, by an expiratory effort, the pressure below the cords becomes much greater than in the ventricles of Morgagni above the cords and in the upper part of the larynx. This increased pressure opens the chink of the glottis, and the cords are slightly stretched upwards. The air escapes, the cords again approximate, and there is a fall of pressure below the cords whilst the pressure rises in the ventricles and in the upper part of the larynx. There is thus a puff of air. This is repeated again and again according to the period of the vocal tone produced.

M. Bonnier associates the old view with the name of Helmholtz, and he so far claims the newer view as his own. This is scarcely correct. Undoubtedly Helmholtz expounded the mechanism of tone production on the "puff" theory, and he likened the acoustic action of the larynx to that of a siren. The view so ably dealt with by M. Bonnier is now almost universally taught. M. Bonnier gives an admirable account of the action of the resonating cavities in modifying quality of tone. He illustrates this by an analysis of the bass, tenor, alto, and soprano voice, and he indicates the physiological mechanism which brings out the best quality in each of these voices, a mechanism which can be trained under a competent teacher. He shows that there is a constant interplay between the muscular mechanisms and the air pressures in the larynx, so that under favorable conditions the best qualities of the voice may be produced. Accent in singing, as the effort of the singer to give emotional expression, is brought about by the action of the nervous arrangements on the muscular mechanism.

There are many excellent remarks on articulation, on the trill, on the means for, as it were, "flinging out" the voice so as to make it effective, and on the vocal registers. There is a brief account of some of the mistakes by which the voice may be injured, and the volume closes with a description of the results obtained by a clinical examination (by laryngoscope and otherwise) of forty-four voices

of persons who desired to become professional singers. Of the forty-four, eight were chosen, and thirty-six were rejected as having such qualities that no amount of training could efficiently fit them for following a *carrière lyrique*. This book places voice production on a scientific basis. Many teachers have taught empirically, and with remarkable success, but they may have made mistakes. M. Bonnier conveys the scientific knowledge that is always the surest guide.

VERWALTUNGSBERICHT DES MAGISTRATS ZU BERlin für das Etatsjahr 1906 [Official Report of the Magistracy of Berlin for the Year 1906], including a Report of the Municipal School Committee.

In a report covering all schools, from the primary course to the high school, classical preparatory school, schools for boys, for girls, mixed, public and private, the following of interest to us is found inserted under "Schulen für viersinnige" [Schools for those with four senses]. Of 228,454 children educated at public expense there were 180 pupils in the deaf and dumb municipal institute, distributed into 16 classes.

In the year 1906-7 the faculty consisted of one Director, 14 female teachers of scholastic branches, and 5 technical instructors.

The plan of instruction aimed especially, besides at the moral and religious education of the pupils, to develop the power of articulate speech, so that they might communicate *viva voce* with their hearing and talking fellow-beings, and that they might hereafter be enabled to take an independent position among men. For this reason the greatest weight was given to cultivating the faculty of speech among the pupils. Any dormant powers of hearing or of speech were sought for, and made use of. Such of the children as had learned to speak before they became deaf were trained by exercises in articulation, so that in many cases normal speech was restored.

As the lack of hearing can be and is principally compensated by the vision, in this year as in previous years special attention was given to guard and develop the pupils' sight, and when necessary, medical advice was sought.

The municipal deaf-mute institute does not at once classify the pupils by their ability, as is done in so many other such institutions, but care is taken, in organizing the classes and by means of individual instruction, to give those pupils who are backward or deficient in intelligence such assistance as they may require.

The arrangements made for special hours for parental lessons to maintain the tie between parents and pupils were continued, and found fruitful of blessings in the maintenance and continuance at home of the instruction received at school.

The attendance was regular and satisfactory, notwithstanding that the pupils were distributed in all parts of the city. Valuable

assistance in this direction was given by the use of vehicles furnished by the municipality or the Abegg endowment.

The Berlin Association for vacation colonies furnished the means of sending 15 weakly children on a much-needed vacation.

A great pleasure was given the children by the distribution of tickets to the performance of "Minna von Barnhelm," at the Schiller Theater. The pupils had previously read the Lessing comedy, and were able to follow the play with the greatest interest and with understanding.

The charity of noble men and women allowed of a Christmas festival being prepared for the pupils, and some 50 of the most needy received gifts of warm clothing and shoes and stockings. These articles are given quietly to the parents, that they may add them to the gifts on the Christmas table.

It may be attributed solely to the consistent cultivation of the oral method that all the pupils, when they leave the institute, are competent to earn their living. The boys on leaving school were apprenticed to good trades, and most of the girls were similarly provided for.

These boys and girls continue to follow the course of the municipal school for the further development of deaf-mutes, which has at present five classes for youths and two for young girls. This school maintains and broadens the school knowledge and brings it in more direct relation with practical and business needs, and keeps them in practice in the gift acquired in the institute of oral conversation with those who can hear.

PROCEEDINGS OF THE INTERNATIONAL CONFERence on the Education of the Deaf, held in Edinburgh, July 29–August 2, 1907.

The complete report of the proceedings of the International Conference of Teachers of the Deaf, held the past summer in Edinburgh, is now before us in the form of a well printed and illustrated volume of 176 pages. The report throughout in its excellent features is in keeping with the rest of the work of the Conference, which made the meeting one of the most enjoyable and profitable that has ever been held, and the committee of management is to be congratulated in completing their task thus in so creditable a manner. The book contains all the papers in full that were read, as well as the discussions upon them; also all the resolutions that were considered and passed, with likewise the discussions held upon them. The illustrations are largely of officers of the Conference and of prominent foreign delegates, and of the Edinburgh and Glasgow Institutions, also of groups of delegates. An appendix is given containing the "Braidwood Medal" prize essay, on the subject, "How to Encourage a Love of Reading in the Deaf," written by Mr. J. W. Barton, of the Margate School.

We take this opportunity to refer to the exhibit of school exercises, school books, and specimens of manual training and trades

teaching work from the various schools represented at the Conference, which exhibit we failed, through oversight, to speak of in our report of the Conference in the October number of the REVIEW. It was decidedly the finest exhibition of the kind ever gotten together, and it reflected credit not only on the schools sending the work, but upon the committee whose duty it was to secure it and to arrange it in place.

The book may be obtained by addressing Mr. E. A. Illingworth, Deaf and Dumb Institution, Edinburgh, or Mr. F. G. Barnes, School for the Deaf, Homerton, London. Price, 3 shillings (75 cents).

THE BERLIN MUNICIPAL SUPPLEMENTARY CLASSES for the Deaf. Report for 1906-7.

These classes are to afford the deaf who have been orally instructed the opportunity of continued regular exercise in speech and speech-reading, to facilitate their intercourse with the hearing, and to insure retaining what they learned whilst attending school. Instruction is free, and consists of instruction weekly five evenings from 7 to 9 o'clock. The summer course was attended by 80, the winter course by 68 pupils. The boys are taught language, arithmetic, and mechanical drawing; the girls receive instruction in language, arithmetic, needlework, etc. The municipal handicraft supplementary classes were attended by the deaf as follows: Bindery and pasteboard course, 10; cabinet making, 16; cloth printing, 1; engraving, 1; gilders, 3; house painters, 3; marble and stone polishing, 8; paperhanging, 4; saddlery, 2; shoemaking, 6; tailoring, 2; typesetting, 2; wood carving and sculpture, 3; miscellaneous, not included above, 18. Of blind 6 attended the piano-tuning and 17 the basket-making course.

THE LEGAL STATUS OF THE DEAF. The Development of the Rights and Responsibilities of Deaf-mutes in the Laws of the Roman Empire, France, England, and America. By Albert C. Gaw, D. C. L., Assistant Professor in Gallaudet College, Washington, D. C. 1907.

This is a pamphlet of 106 pages, and is a reprint of the series of papers running through successive issues of the American Annals of the Deaf for the past year and a half. The work was originally prepared as a required thesis for gaining the doctorate degree in Civil Law; it is, therefore, the fruit of the study and research of a trained mind along legal lines; more than this, it possesses qualities greatly adding to its trustworthiness due to the fact of the author's intimate knowledge of and varied experiences with the deaf of all grades of capacity, through his years of association with them in the various relations of school, social, and business life. The work is thus authoritative in the broadest sense, and it will, we doubt not,

be so considered by the legal profession and the judiciary, who will in the coming years make large use of it for their guidance in cases involving the legal rights and responsibilities of the deaf.

SUNTO SOMMARIO DEGLI ARGOMENTI SVOLTI DA G. Ferreri nelle sue Publicazioni [Summary Catalogue of the Works of G. Ferreri].

This is a pamphlet giving titles with brief descriptive notes of the works of Prof. G. Ferreri, whom our readers know so well and favorably through his contributions to the REVIEW. The list is interesting even in the titles alone as showing the scope of the literary work accomplished by Professor Ferreri in a comparatively brief space of time. We are glad to print the list of titles, which we do below, for its bibliographical values:

1. Otology and the deaf-mute schools. 1888.
2. Graduated reading exercises for deaf-mute schools. 1888 and 1889.
3. How to teach the deaf-mute to speak *Well.* 1889. Translation of address by G. Vatter.
4. Congenital deafness. 1891. Translated from the Danish of H. Mygind.
5. Some questions as to the education of deaf-mutes. 1892.
6. Measures necessary for the oral method in deaf-mute schools. 1893.
7. Education of deaf-mutes in Italy. 1893.
8. Remarks on an open letter from Prof. P. Fornari to the Minister of Public Instruction. 1896.
9, 10, 11. The deaf-mute and his education; Pedagogical, Didactical, Historical; 3 volumes. 1895, 1896.
12. The Conjugation of Italian Verbs. 1897.
13. Deafmutism. 1897. Translation from the German of H. Mygind. (Published also in English.)
14. On the auricular system of Dr. Urbantschitscht. 1897.
15. Elementary rules for the education of deaf-mutes. 1897.
16. Catalogue of works in the Library of the Royal Pendola Institute at Siena. 1898.
17. Charity and deaf-mutes. 1898.
18. Deaf mutes and compulsory education in the legislation of civilized nations. 1898.
19. The auditory faculty of deaf-mutes. 1899.
20. Deafness and deafmutism. 1899.
21. Language teaching for deaf-mutes. 1900.
22, 23. The International Congress of Paris.
24. A serious error. 1901.
25. Some letters from Dr. J. Wallis. 1903.
26. American Institutions for the Education of Deaf-mutes. 1903. (Published in English in the ASSOCIATION REVIEW.)
27. Two articles by Dr. Ernst Adolf Eschke. 1906. (Translated from the German.)

28. A month in Germany among the deaf-mutes. 1904.
29. An article by Helen Keller. 1904.
30. The development of the mind under the simultaneous deprivation of sight and hearing. 1905.
31. The education of blind deaf-mutes. 1906.
32. The educability of blind deaf-mutes. 1907.
33. The Congresses of Liege.
34. Legal guardianship of deserted and ill-used children. 1905.
35. With reference to an imperfection in the articulation of abnormal children. 1905.
36. The pedagogical question of infant schools for deaf-mute children. 1906.
37. Historical documents relative to the education of deaf-mutes. 1907.
38. Bülletin of the Roman Association for the medico-pedagogical care of indigent abnormal and defective children. 1907.
39. Testimony of deaf-mutes. 1907.
40. The cause of deaf-mutes at the International Congresses of Edinburgh and London (July–August, 1907).

STATISTISCHE NACHRICHTEN UBER DIE TAUBSTUMmen-Anstalten Deutschlands, sowie über deren Lehrkräfte für das Jahr 1908 [Statistics as to the Deaf-mute Institutions of Germany as well as their teachers, for the year 1908]. By Prof. J. Radomski, Director of the Provincial Deaf-mute Institute at Posen. Twelfth year.

This handbook of information, published in the form of an almanac, contains in a condensed form statistics covering the following subjects: Alphabetical list of teachers with reference to institution where employed. Tables giving reports relative to deaf-mute institutes under these heads: Locality; class; number of inhabitants by thousands; kind of institution; year of foundation; years of course; beginning of school year; number of teachers; number of classes; number of pupils; sex; religion; day school or boarding; age at admission; revenue by thousands; vacations. Tables showing details regarding teachers in deaf-mute institutes: Locality; name of teacher; position; year of birth; religion; year of entering profession; year of commencing tuition of deaf-mutes; year of entering this institution; present salary; lodging or allowance for house rent; additional employment and remuneration; classification. Brief remarks of interest under the following subjects complete the work: Supervision; Jubilees; Pensions and Deaths; Book Notices; Compulsory School Attendance; Associations.

REVUE BELGE DES SOURDS-MUETS ET DE LEUR ENseignement [Belgian Review of the Deaf and their Instruction]. Louvain, Belgium. December, 1907.

Contents: Audition and Phonation of the Deaf, by Dr. Marage and by I. Laudrain; The Nasal Voice, by A. Herlin; News Items; Reviews.

REVUE GÉNERALE DE L'ENSEIGNMENT DES SOURDS-Muets [General Review of the Instruction of the Deaf]. Paris. November, 1907.

Contents: Flying Visits, by G. Ferreri; The Siren for Vowels; The International Conference at Edinburgh, by Ad. Bélanger; Defects of Language arising from imperfect or defective organs, by R. Kolher; Audition and Phonation of the Deaf, by Dr. Marage; Book reviews, etc.

L'EDUCAZIONE DEI SORDOMUTI [The Education of the Deaf]. Rome, Italy. December, 1907.

Contents: Flying Visits, by G. Ferreri; Voice and Speech, by P. Parise; Analysis of the Principal Works of F. M. Hill, by E. Reuschert; Gleanings; Reviews; Notes and Comments, by the editor.

EPHPHETHA. Nos. 1, 2, and 3, August, September, and October, 1907. Published in the interest of the Deaf-mute Institute of the Province of Buenos Aires. La Plata, Argentine Republic.

This publication contains articles on the present condition of the education of deaf-mutes in Argentina, showing the inadequate provision made therefor. The census of 1895 reported, aside from 2520 persons classified as "idiots," among whom were doubtless included many neglected and uneducated congenital deaf-mutes, the number of 5,627 individuals classified and reported as deaf-mutes in a total population for the same census of 3,851,542. For these the national institutes (2) at Buenos Aires and that at La Plata, with an aggregate capacity of 200 students, are entirely insufficient.

A serial article upon Prof. Alexander Graham Bell and the Volta Bureau runs through the three numbers. We find also articles on the education of deaf-mutes by the oral method in the United States; the causes of deafmutism, and Gallaudet College. The October number gives an interesting map, showing the geographical distribution of deaf-mutes in the Argentine Republic and their proportionate relation to the density of population.

AMERICAN ANNALS OF THE DEAF. Washington. January, 1908.

Contents: Backward Children, by Jennie L. Cobb; Differences in the Natural and Artificial Acquisition of Langauge, by Karl Baldrian; Discussion of same, by Mary Williams; The Military Feature at the Fanwood (N. Y.) School, by A. Webster Dobyns; The Proportion of Deaf Persons Married to Deaf Partners and to Hearing Partners, by Alexander Graham Bell; Visits to American Schools for the Deaf, by W. H. Addison and Frank G. Barnes; Schools for the Deaf not Charitable Institutions, by J. Frank Hanley; Some Things we Should Like to Hear About at the Convention, by Sylvia

Chapin Balis; Methods of Instruction in American Schools for the Deaf, by the editor; Tabular Statement of American Schools for the Deaf, Nov. 10, 1907, by the editor; Industries Taught in American Schools for the Deaf, by the editor; List of American Instructors of the Deaf, November 10, 1907, by the editor; The Eighteenth Meeting of the Convention of American Instructors of the Deaf, by Edward M. Gallaudet; School Items and Miscellaneous.

REVISTA DO INSTITUTO NACIONAL DE SORDOS-Mudos [Review of the National Deaf-Mute Institute]. Rio Janeiro.

The two numbers of this review received (April and September, 1907) show commendable progress in Brazil in the oral method for deaf-mutes. The periodical is illustrated, and contains (April) an interesting article on the education of Helen Keller and Thomas Stringer, with portraits of the subjects of the article.

THE TEACHER OF THE DEAF. Woodvale, Bexley, Kent, England. January, 1908.

Contents: To Our Readers, by the editor; Amalgamated Examination Scheme; Educational Treatment of the Deaf, by Dr. James Kerr Love; Visit to American Schools, by W. H. Addison; Relation of the Invention of the Telephone to Deaf Education, by Fred De Land; The Education (Administrative Provision) Act, 1907; The Deaf—not Dumb; School Laws; N. A. T. D. Executive Meeting; Metropolitan and Southern Branch Meeting.

NORDISK TIDSKRIFT FÖR DÖFSTUMSKOLAN [Scandinavian Journal for the Schools for the Deaf]. Vanersbourg, Sweden. No. 10, 1907.

Contents: The First Scandinavian Congress of the Deaf, in Copenhagen, by Fredrik Nordin; Norway's Convention of Teachers of the Deaf, by P. Anderson; On the Teaching of the Deaf by Classes, by M. Gronning; The Deaf in Russia, by E. J.; Report of the Convention of Teachers of the Deaf in the Rhine Province, by A. J.

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EDITORIAL COMMENT.

THE ANNUAL MEETING OF THE BOARD OF DIRECTORS OF THE ASSOCIATION.

The annual meeting of the Board of Directors of the Association was held at the Lexington Avenue School, New York City, January 24, 1908.

There were present the following named directors: A. L. E. Crouter, president; Caroline A. Yale, second vice-president; Z. F. Westervelt, secretary; Sarah Fuller, Mary McCowen, Job Williams, Edmund Lyon, E. McK. Goodwin, E. A. Gruver; also F. W. Booth, general secretary and treasurer. Reports of officers and committees were read and the general secretary and treasurer read his annual report of the work of his office, including a financial statement covring the receipts and expenditures for the year.

A formal report of the work of the Normal Department of Clarke School for the past year and a half was presented by Miss Yale, and the Board thereupon passed a resolution unanimously approving the work done, and requesting of the Clarke School Board of Corporators that the normal training class be continued, and under such conditions as the corporators may elect to institute to make such continuance possible.

Miss Yale's report covered also the Summer School work of the past summer, there being an attendance of twenty-six teachers taking the four weeks' course. This work was also approved by the Board, and the corporators were, by resolution, requested to conduct a session of the Summer School the coming summer.

Upon Miss Fuller's suggestion the general secretary was directed to see what could be done to secure a republication of the "Raindrop," published originally at the Western Pennsylvania Institution by the teachers of that school.

The Visible Speech printing in the REVIEW received the hearty approval of the Board, and the editor was directed to continue the work as a regular department of the magazine and to secure such additional type as might be necessary for the purposes of the department.

The next annual meeting of the Association was appointed to be held at Rochester, at the School for the Deaf, on May 6, 1908, at 10 o'clock a. m. This will be a meeting of the members of the Association, in conformity to law, for the transaction of business, including the election of directors. No literary exercises will be held at this meeting.

The treasurer presented a list of persons who had applied for membership, and they were duly elected members of the Association. (See list printed elsewhere in this number of the REVIEW.)

The election of officers of the Board for the ensuing term resulted as follows: President, A. L. E. Crouter; first vice-president, Alexander Graham Bell; second vice-president, Caroline A. Yale; secretary, Z. F. Westervelt; auditor, E. A. Gruver; treasurer, F. W. Booth. F. W. B.

THE PSYCHOLOGICAL BASIS OF THE ORAL METHOD.

We wish to direct the attention of our readers—especially of those who, afflicted with honest doubts and confused by conflicting experiences, are yet earnestly seeking for a justification for the oral method resting upon psychological, physiological, didactic grounds—to the review presented in our "Books, Periodicals, and Reports" Department, of the pamphlet on the above subject, by Director Friedrich Werner, of the Institution for the Deaf at Stade, Germany. For our own part we have never had the pleasure of reading anything so clear, so philosophical, and withal so convincing, as showing the rational basis of the present-day German (oral) method as opposed to the various and sundry methods involving the early and large use of written language and of manual alphabets in deaf instruction. The whole argument of Director Werner centers upon and revolves about the dictum: "Develop speech in the deaf child *in such a way that his* THINKING *may as soon as possible be based upon his* SPEECH-SENSATIONS," and, thus formulated, it is given us as a fundamental principle in which is found "the long needed and sought for psychological basis of the oral method." F. W. B.

A new edition of the work on "Formation and Development of Elementary English Sounds," by Caroline A. Yale, has been published by the Association, and it can now be supplied upon application to the General Secretary. Price for single copies, 25 cents.

THE ANNALS STATISTICS.

The American Annals of the Deaf for January, 1908, gives its usual annual statistical tables relating to pupils and teachers in American schools reported as present on November 10, 1907. Our own crowded pages did not permit the analysis of the figures of last year's tables, so in what follows reference will, in places, be made to last year's figures.

The number of schools in the United States, including boarding, day, and private and denominational schools, was 137, an increase of 5 over the 132 reported a year ago, which in turn was an increase of 4 over the 128 reported in 1905. The number of pupils in school on November 10 was 11,648, or exactly the same number reported present on the same date the year previous, but 304 more than reported for 1905. The number of pupils "taught speech" (Column A) was increased by 194 in the year, the increase the previous year being 146; the number "taught wholly or chiefly by the oral method" (Column B) was increased by 855 in the year, but a decrease of 88 the year before leaves the net increase in two years 767. (The unusual increase the last year, and equally unusual decrease the year before, may be accounted for in the fact that one large institution, in its report of November 10, 1906, made no record of pupils in Column B, where its practice for many years—with this exception—has been to record its full pupilage in this column. The figures in Column B for this institution were, for 1905, 411; for 1906, ...; for 1907, 420.) The number of pupils taught wholly or chiefly by the auricular method (Column C) was this year decreased by 4, the increase the previous year having been 3.

The number of academic teachers increased from 1,159 in 1905, to 1,174 in 1906, and to 1,193 in 1907, a total increase in two years of 34. The figures show an increase in the number of articulation teachers in the last year of 2, the increase the year before being 16. The average annual increase in the number of articulation teachers during the past 14 years has been a fraction more than 31. (It should be noted that one large school—reporting this year 349 pupils taught speech and all of these as taught wholly or chiefly by the oral method—gives no figures showing the number of articulation teachers this year on its staff. The Annals figures of this school for the last three years show the number of its articulation teachers as, for 1905, 39; for 1906, 39; for 1907, ...)

The following tables give the footings of the Annals tables for the years from 1893 to 1907, inclusive, with percentages computed from them: (See also tables published in the ASSOCIATION REVIEW, June, 1907, pp. 370 and 371, and pp. 379 and 380.)

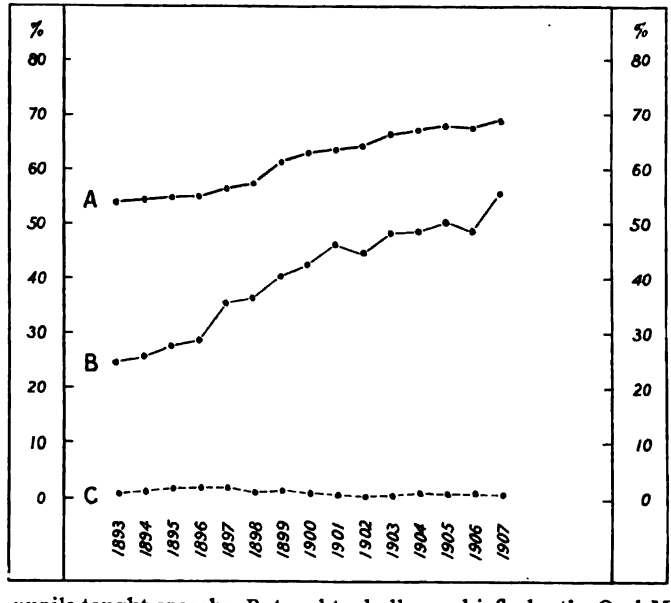
SCHOOLS FOR THE DEAF IN THE UNITED STATES.

Statistics from the Annals.

Year.	Total schools.	To pupils.	Number of pupils taught speech.			Percentage of pupils taught speech.		
			A	B	C	A	B	C
1893.....	79	8,304	4,485	2,056	80	54.0	24.7	0.96
1894.....	82	8,825	4,802	2,260	109	54.4	25.6	1.24
1895.....	89	9,252	5,084	2,570	149	54.9	27.7	1.61
1896.....	89	9,554	5,243	2,752	166	54.9	28.8	1.71
1897.....	95	9,749	5,498	3,466	162	56.4	35.6	1.66
1898.....	101	10,139	5,817	3,672	116	57.4	36.2	1.14
1899.....	112	10,087	6,237	4,089	128	61.8	40.5	1.27
1900.....	115	10,608	6,687	4,538	108	63.0	42.8	1.02
1901.....	118	11,028	6,988	5,147	73	63.4	46.7	0.66
1902.....	123	10,952	7,017	4,888	63	64.1	44.6	0.58
1903	128	11,225	7,482	5,433	100	66.6	48.4	0.89
1904.....	133	11,316	7,601	5,508	154	67.2	48.7	1.36
1905.....	128	11,344	7,700	5,733	149	67.9	50.5	1.31
1906.....	132	11,648	7,846	5,645	152	67.4	48.5	1.31
1907.....	137	11,648	8,040	6,500	148	69.0	55.8	1.27

A, taught speech; B, taught wholly or chiefly by the Oral Method; C, taught wholly or chiefly by the Auricular Method.

The percentages in the above table, in the direction and measure of the changes that they show, are illustrated in the diagram:



A, pupils taught speech; B, taught wholly or chiefly by the Oral Method; C, taught wholly or chiefly by the Auricular Method.

The following table gives the number of instructors of the several classes indicated, as compiled from the Annals footings. It will be noted that since 1897 the industrial teachers have been included in the returns to the Annals and hence in its totals. The percentages as computed relate exclusively to the academic teachers, there being no means of determining the number or percentage of industrial teachers employing articulation in their work of instruction:

INSTRUCTORS OF THE DEAF IN THE UNITED STATES.

Statistics from the Annals.

Year.	Total teachers.	Industrial teachers.	Not including industrial teachers.		
			Total teachers.	Articulation teachers.	
				Number.	Percentage.
1893	.....	....	765	331	43.3
1894	.....	....	784	372	47.4
1895	.....	....	835	397	47 5
1896	.....	....	879	427	48.6
1897	1,188	260	928	487	52.5
1898	1,253	304	949	530	55.8
1899	1,309	323	986	561	56.9
1900	1,353	343	1,010	588	58.2
1901	1,385	358	1,027	641	62.4
1902	1,388	349	1,039	664	63.9
1903	1.438	373	1,065	696	65.4
1904	1.453	328	1,125	734	65.2
1905	1,491	332	1,159	749	64.6
1906	1,525	351	1,174	765	65.2
1907	1,552	359	1,193	767	64.3

Since the last report in the Annals new schools have been established or added to the list, as follows: At Dundee, Ill., in charge of Miss Mary A. Loar; at Moline, Ill., in charge of Miss Ettie B. Root; at Iron Mountain, Mich., in charge of Miss Anna M. Trondsen; at Marquette, Mich., in charge of Miss Maria P. Templeton; at Sault Ste. Marie, Mich., in charge of Miss Jessie L. Thew; at Rice Lake, Wis., in charge of Miss Katharine Fulton; at Seattle, Wash., in charge of Miss M. Ina Smith. Schools discontinued or dropped from the list are, the Yale Avenue (Chicago) School, and the Elyria (Ohio) School. F. W. B.

Tongue manipulators, used by articulation teachers, for sale. Price, 40 cents each. Address the General Secretary.

THE DISCUSSION OF DR. CROUTER'S PAPER AT THE EDINBURGH INTERNATIONAL CONFERENCE.

Our members, both active and associate, have received copies of the Circular of Information issued by the Association, containing Dr. Crouter's paper, read at the Edinburgh Conference. The receipt of the published report of the proceedings of the Conference makes it possible now to present the discussion following the reading of the paper, which we feel sure the readers of the REVIEW will be pleased to have in full. The discussion was as follows:

The CHAIRMAN[1]: Ladies and gentlemen, I am sure you will wish me on your behalf to tender your hearty thanks to Dr. Crouter for the excellent address to which we have listened with so much pleasure. It shows what I might almost call an ideal state of things. Every part of the instruction, and every possible arrangement seems to have been the object of very careful thought. I may say that somewhat similar ideas have been in the minds of us for some time. My professional friends will remember that about ten or fifteen years ago such subjects as those engaged our attention very much, and the result was that various standards of instruction were laid down, which, having been accepted to some extent, we have been able to carry out. We have not been fortunate enough to have all the resources that Dr. Crouter has in his institution, so we have not been able to achieve the same results which have evidently been realized in the Pennsylvania Institution. One point on which I think we may congratulate ourselves in our state of, I won't say disorganization, but of less perfect organization, and that is that the ages of our pupils and those of Dr. Crouter differ very materially. He carries his pupils, I think, up to twenty-one or so. Ours leave at sixteen. Consequently a great deal of the advanced instruction he has so ably shown us we are not able to provide for. There is another point I should like to mention. We have heard the expression of Dr. Crouter's own ideas, evolved from his own experience and his own knowledge of the subject, as to the relative difference of the oral and the silent method. That of course is a matter of dispute. We might say now at our age of history, it is a matter of opinion, and as such you must accept what Dr. Crouter has said as the result of his own experience. It does not necessarily bind this Conference. (Hear, hear.) The last word on the subject has not yet been said. We have had our battles royal over it, and at the present time we are in a state of neutrality. I think we are leaving the subject to effect its own result. I have no doubt that will be brought about in the proper way. We have all our own opinions on the subject. I may say that my opinion coincides to a very great extent with Dr. Crouter's. But others have not arrived at that point yet. I was some time in getting to it. Be that as it may, I should like to call your attention to the fact

[1] Dr. Richard Elliott.

that these opinions do not bind the Conference. If any lady or gentleman wishes to ask Dr. Crouter a question, now is the time. By way of setting the ball a-rolling, I should like to ask Dr. Crouter if there is any provision for recreation in his school?

Dr. CROUTER: There are regular hours provided for recreation. We take great care to do that. Our boys and girls engage in all manner of games. We have a physical training department in which an efficient system is used, and the directions in which are given by and through speech. We provide ample recreation for all our pupils, although they have to work pretty hard. (Applause.)

Sheriff PENNEY: I quite agree with the Chairman that it would be very undesirable to discuss or debate open questions. I am a co-director of an institution wishing to learn, and whatever my prejudices, I have an open mind to hear what can be said on all sides. I think the great value of the papers we have had read to us from all parts of the world is that we have been given statements of what is being done in the different schools, and statistics from which we can draw our own conclusions. (Applause.) There has been no attempt made even by such an enthusiast for the oral system as Dr. Crouter to talk antagonistic to the other systems. He states his case with great force. While I express my great pleasure at what has been said, I have to acknowledge that my prejudices in favor of the combined system have been very much shaken. (Applause.) I understand the oral system can only be carried out under very favorable conditions. I mean, as Dr. Crouter stated, you must have almost complete segregation of the one class of children from the other. As a director of our boarding institution I would like to ask Dr. Crouter one or two questions. They are—What communication have the children with their homes during the school session? Do they go home weekly or monthly, or for so many months of the year? What is the communication in their homes during the session? How long holidays have they? And what do the children do at their homes? Do they find that in their communication with their brothers and sisters and their parents they can keep up the oral system, or do they fall back into the manual system? What happens when they leave school? We hear that the oral system in this country, even when acquired, is given up when the children get home. Is Dr. Crouter's experience that it is being kept up in the homes of America? Dr. Crouter made one admission, I think it may be an admission to the present state of matters. He said that the manual method must always remain a valuable means of communication among the adult deaf. (Applause.)

Mr. STORY: Would Dr. Crouter kindly tell us what proportion of children admitted into the primary grades of his school are the congenital deaf?

Dr. CROUTER: I think it is generally stated that about 23 per cent of the deaf in our schools constitute the adventitious class. They have become deaf through disease or accident. All the others are either born deaf or have become deaf very early in life. That

percentage holds good with us. We admit to our primary department the born deaf, those who are totally deaf, without restriction of any sort. In the advanced department the proportion of the born deaf to those who are totally deaf, whether from disease or accident, bears the same proportion as it does in the other departments. In other words, do not for a moment think that the advanced department is composed of semi-mute and semi-deaf pupils, for such is not the case. (Applause.) I am afraid that in asking for questions we shall get into a discussion on the methods of teaching the deaf. That I shall avoid. I never had any thought in presenting a report of the work of the school at Philadelphia of entering upon a criticism of the objects pursued in other schools. I was asked by my friend, Mr. Addison, to present the methods of instruction that are pursued in my school, and that task I have endeavored to fulfill. (Applause.) The children have a summer vacation of about twelve weeks, when they all go to their homes. In addition, they have about twelve or fourteen days at Christmas, and they have another vacation period at Easter. I cannot answer fully and definitely whether at all the homes they communicate in a certain system, because I am not acquainted with all the homes; but this I will say, that so far as my information extends, the communication between the parents and adults at home is oral—(applause)—for the very good reason that in the great majority of instances the parents of deaf children know no other way of communicating. (Applause.) They do not understand sign language. They can understand if their children can talk. Even if the pupil's speech is very imperfect, it is quite sufficient if that speech is understood by the father and the mother. (Applause.) I have been surprised that speech that I have considered as being very imperfect has been fully understood at home in the family circle. (Applause.)

Sheriff PENNEY: Do you find that children in after-life do not, in intercourse with those of their own family, require to go back to signs?

Dr. CROUTER: No, my experience is that they resort to speech, and frequently the speech is imperfect in the home circle. (Applause.)

Mr. ILLINGWORTH: I should like to ask a question. In the primary department, the children in the second year seem to possess a good deal of language. Can these children speak and lip-read all the language that they understand in the written form?

Dr. CROUTER: Undoubtedly, they must understand the spoken word before they receive the written word. (Applause.)

Copies of "The Mechanism of Speech," by Alexander Graham Bell (second edition, with Synopsis and Index added), on sale at $1.20 per copy. Address orders to F. W. Booth, General Secretary, 1525 35th St., N. W., Washington, D. C.

THE COMMITTEE ON INTERNATIONAL STATISTICS APPOINTED BY THE EDINBURGH CONFERENCE OF TEACHERS OF THE DEAF.

The Report of the Proceedings of the International Conference at Edinburgh gives the full list of the Committee on International Statistics as appointed at the Conference, and we reproduce it here for the information of our readers and for reference uses. Steps are being taken, we have been informed by the secretary, to have the Committee enlarged to include members to act for countries that as yet have no representatives:

America	Prof. F. W. Booth, Washington. Prof. E. A. Fay, Kendall Green, Washington.
Denmark	Mr. A. Hansen, Nyborg.
France	Prof. Bélanger, Paris. M. Dupont, Paris.
Holland	M. Roorda, Groningen.
Italy	Prof. Giulio Ferreri, Rome.
Russia	Mdle. Külpe, St. Petersburg.
Australia—	
Queensland	Sir Horace Tozer, Agent-General.
Victoria	Mr. F. Tait, Director of Education.
S. Australia	Mr. Williams, Director of Education.
Canada	Mr. J. Fearon, Halifax, Nova Scotia.
New Zealand	Mr. G. Hogben, Inspector-General.
South Africa	Mr. W. H. Nicholas, Natal.
Great Britain and Ireland	Mr. B. St. John Ackers (Chairman), England. Mr. B. P. Jones, England. Mr. J. W. Fisher (Secretary), England. Mr. W. H. Addison, Scotland. Mr. J. Beattie, Ireland. (And Office-bearers of the N. A. T. D.)

The above Committee to have power to add members from countries not represented at the Conference.

SUPERVISING PRINCIPALS.

The gradual extension of the practice in our schools of appointing supervising teachers or principals of departments, is one of the gratifying signs of the times, indicating as it does the growing appreciation on the part of governing authorities of the value of expert supervision, skillful leadership, and centered responsibility in the conduct of the strictly educational work of the schools. The most

recent appointments that have come to notice of supervising principals are, that of Mr. M. C. Boylan in the Mississippi Institution, Mr. A. Webster Dobyns in the Arkansas Institute, Miss Nettie McDaniel in the Georgia School, Miss Helen G. Throckmorton in the Virginia School, Miss Bettie L. Bowles in the Utah School, Miss Frances McKinley in the South Dakota School, and Miss N. Louise Upham in the North Carolina School.

THE WORK OF THE TEACHERS' BUREAU.

The annual report of the General Secretary to the Board of Directors gave the work of the Teachers' Bureau during the past seven years that it has been in operation, as follows. The tabulation shows the number of persons who have made use of the Bureau in classes as teachers, principals of schools, and parents of deaf children, in the years indicated:

Using the Bureau in—	Teachers.	Principals.	Parents.	Total.
1901	56	20	7	83
1902	71	18	8	98
1903	82	19	2	103
1904	83	21	4	108
1905	81	22	10	113
1906	85	27	20	132
1907	61	37	9	107

The past year, as the figures show, the demand for teachers on the part of principals has been greater than ever before, while the supply of teachers available through the Bureau has been less than in any year since 1901. This is a significant fact and one having many bearings, but it bears most, perhaps, upon the subject of the training work now doing and in contemplation by the Association and other agencies, and upon the immediate necessity of enlarging and strengthening that work wherever it is being prosecuted upon practical and effective lines. In this connection, and with the work of the Bureau for the coming year in view, we urge upon all who contemplate making use of the Bureau, either as teachers seeking positions, or as principals or parents desiring teachers, that they indicate their wishes as early in the year as possible, and, moreover, that teachers particularly inform the Bureau at once when engagements are consummated. F. W. B.

THE APPOINTMENT OF A STATE OCULIST RECOMMENDED.

Governor Vardeman of Mississippi, in his recent message to the Legislature of that State, in addition to commending in high terms the management of the State School for the Deaf, located at Jackson, the State capital, makes the following very practical recommendation. It should be remembered that several, if not all, of the State institutions of Mississippi are located at the capital:

"I would recommend that the office of State oculist be created, whose duty it should be to treat the pupils in the institutions for the blind, to also treat the eyes of the deaf and dumb students, the inmates of the lunatic asylum and the State penitentiary. It is a singular thing to me that for all these years the State has not provided an oculist to look after and treat the students of the deaf and dumb institution, whose eyes are so necessary to take the place of the power of speech and the sense of hearing which are denied them. There are cases which the State oculist should be called upon to treat in the lunatic asylum, and there is pressing necessity for his services in the State penitentiary."

NEW MEMBERS.

The following named persons have been elected to Active Membership in the American Association to Promote the Teaching of Speech to the Deaf, by vote of the Board of Directors. The list includes those elected since the last published report to January 1, 1908:

Babbitt, Mrs. Frank Cole, 65 Vernon St., Hartford, Conn.
Balch, Grace A., School for the Deaf, Providence, R. I.
Behmer, Flora A., School for the Deaf, Indianapolis, Ind.
Betson, Anna L., 116 North 26th St., Omaha, Neb.
Betts, O. A., Goldsboro, N. C.
Bowman, Blanche, School for the Deaf, Morganton, N. C.
Burke, Amy M., School for the Deaf, Belleville, Canada.
Camp, Hope, 26 Clinton St., Watertown, N. Y.
Carter, Maud, School for the Deaf, Indianapolis, Ind.
Clarke, Elizabeth H., School for the Deaf, Morganton, N. C.
Collignon, Victor, Director School for the Deaf, 254 rue St. Jacques, Paris, France.
Cram, Fannie A., Jacksonville, Illinois.
Cullen, Barbara C., 2700 Fannin St., Houston, Texas.
Director dell Instituto Gualaudi per Sordomuti, 151 Via dei Gracchi, Rome, Italy.
Farmer, Orpha, School for the Deaf, Mystic, Conn.
Forbes, Cora B., 453 Grey Ave., Webster Groves, Mo.
Galloway, Wm. C., School for the Deaf, Berkeley, Cal.

Greenslade, Geo. H., School for the Deaf, Doncaster, England.
Haeseler, Charlotte S., School for the Deaf, Northampton, Mass.
Haycock, Geo. Sibley, Training College for Teachers, 11 Fitzroy Square, London, England.
Heinosuke, Watanabe, Deaf, Dumb, and Blind School, Osaka, Japan.
Hewitt, Edith H., Training College for Teachers of the Deaf, Eaton Rise, Ealing, London, England.
Hill, Marion C., School for the Deaf, Providence, R. I.
Holt, Martin H., Oak Ridge, N. C.
Jennings, Mrs. Richard W., 37 Sumpter St., Providence, R. I.
Jones, Benj. P., 15 Denmark Ave., Wimbledon, London, England.
Kolp, E. R., Fort Worth, Texas.
Kutner, S., School for the Deaf, 101 Nightingale Lane, London, England.
Lane, Thomas H., 1825 Bluff St., Pittsburgh, Pa.
Lloyd, David, 128 W. Eleventh St., New York City.
Loar, Mary, School for the Deaf, Dundee, Ill.
Lowry, Frances, School for the Deaf, Hartford, Conn.
McNamar, Mary, School for the Deaf, Salem, Oregon.
Morrill, Anna L., Falkland, N. C.
Musser, Mary L., Home for Deaf Children, Bala, Philadelphia, Pa.
Nelson, Wm., School for the Deaf, Old Trafford, Manchester, England.
Norris, Susan Hartman, 534 West 187th St., New York City.
Pickering, Mrs. Nellie W., 5025 Michigan Ave., Chicago, Ill.
Read, Elmer D., School for the Deaf, Edgewood Park, Pa.
Regan, Margaret A., 63 West 128th St., New York City.
Richards, Sybil B., School for the Deaf, Providence, R. I.
Roberts, Margaret Harding, 431 North Third St., Danville, Ky.
Roe, Fred H., Royal Institution for the Deaf, Derby, England.
Rousseau, E. M., Box 311, Somerset, Ky.
Smith, M. Ina, School for the Deaf, 20th and E. Thomas Sts., Seattle, Wash.
Stelling, H., Ostfriesische Taubstummenanstalt, Emden, Germany.
Stevenson, W. E., 84 State St., Boston, Mass.
Stout, Prof. J. H., Menominee, Wisconsin.
Tillinghast, Robina L., 309 Willard St., Durham, N. C.
Uline, Minnie V. A., School for the Deaf, Mt. Airy, Philadelphia.
Whitcher, Cora M., 534 West 187th St., New York City.
Wilson, J. Charles, 541 Third Ave., Pittsburgh, Pa.
Wilson, Mrs. L. L. W., Normal School, 13th and Spring Garden Sts., Philadelphia.
Williams, M. Claudia, 200 High School St., Scranton, Pa.
Winnie, A. J., State Inspector of Deaf Schools, Madison, Wis.
Woodcock, Ellen C., School for the Deaf, Providence, R. I.
Wood, Lila W., School for the Deaf, Cedar Spring, S. C.
Ziegler, Clara Meserve, 1 Ellis St., Roxbury, Mass.

WANTED, for the school year of 1908-9, a teacher of intermediate grades. One preferred who has also had experience in primary grades. Address, John D. Wright, 1 Mt. Morris Park, West, New York City.

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THE ASSOCIATION REVIEW is a publication of the American Association to Promote the Teaching of Speech to the Deaf. It is sent free to Active Members of the Association. Active membership is obtained upon payment to the Treasurer of the membership fee of two dollars ($2), or its equivalent in foreign currency—8s. 4d. in English money; 8m. 2pfg. in German money; 10fr. 2c. in French money; 7 kr. 50 ore. in Norwegian, Swedish, and Danish money; and 10l. 2c. in Italian money. Postal money orders should be drawn on Washington, D. C., in favor of F. W. Booth.

BLANK FORM FOR APPLICATION FOR ACTIVE MEMBERSHIP IN THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

____ __*1908.*

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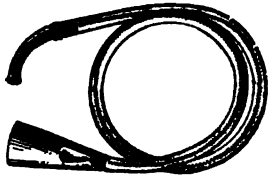

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FRANK W. BOOTH, EDITOR

April, 1908

The Real Romance of the Telephone, or Why Deaf Children in America Need no Longer be Dumb, XXV–XXVI FRED DE LAND 123

Special Report upon the Deaf, Based on the Returns of the Twelfth Census—Continued - ALEXANDER GRAHAM BELL 138

The Fifth Danish Meeting of Teachers of the Deaf ANDERS HANSEN 148

Mirror Practice as an Aid to Lip-Reading - MILDRED KENNEDY 155

Some Suggestions about Lip-Reading - - MARY DAVIS JONES 160

A Few Thoughts Concerning Eugenics ALEXANDER GRAHAM BELL 166

The Fear of the Written Word - - - - J. G. DE VRIES 174

Contemporary Thought - - - - - - - - - - 186

Institution Press - - - - - - - - - - - 193

Ʒſʊſɘω ʊɒſɑɲ ʊſɒ}ɤɔɘ[ʊɔ> - - - - - - 202

John Hitz - - - - - - - - - - - - - 216

Editorial Comment - - - - - - - - - - 217

Call for the Annual Meeting of the Association - - - - - - 231

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THE REAL ROMANCE OF THE TELEPHONE, OR WHY DEAF CHILDREN IN AMERICA NEED NO LONGER BE DUMB.[1]

BY FRED DE LAND.

CHAPTER XXV.

EXPLAINS HIS TELEPHONE THEORY TO PROFESSOR HENRY.

Late in February, 1875, Graham Bell was called to Washington by his patent attorneys on business concerning the harmonic telegraph system he had invented and for which letters-patent had been applied. In this application which was filed in the patent office February 25, 1875, he "described two ways of producing an intermittent current—the one by actual make-and-break of contact, the other by alternately increasing and diminishing the intensity of the current without actually breaking the circuit," which he called a pulsatory current.

Before going to Washington he secured a letter of introduction to Prof. Joseph Henry, then secretary of the Smithsonian Institution. Henry had prepared the way for the telegraph which Morse had perfected and was the foremost scientist in America. In later years, Sir William Thomson said: "Joseph Henry and Faraday were patterns of scientific investigators. In some degree they went parallel and made similar scientific discoveries. Henry, indeed, preceded Faraday in the great discovery of the electro-magnetic induction between unmoved conductors. Henry gave the warmest welcome to all practical applications of his discoveries. He sought to make none himself, not because he superciliously despised the application of science to the public

[1] Commenced in the October, 1905, number.

good, but because his own convictions constrained him to go on in pure science."

Graham Bell understood that certain features which he had worked out in telegraphy had previously been discovered by Henry. So he called and explained some of the difficulties he was laboring under in perfecting his telegraphic system. Henry listened with evident interest, and when certain experiments had been described, he asked to be allowed to repeat the experiments and to publish them to the world through the Smithsonian Institution, of course giving all the credit of the discovery to Graham Bell. This request was granted, and an offer made to show the apparatus and experiments. Then Professor Henry, though aged, and suffering from a cold, insisted on going at once to see the apparatus, which was temporarily at Mr. Hubbard's home in Washington. He put on his coat and was about to order his carriage, when Graham Bell "offered to save him the trouble of going out on such a raw, damp day, by bringing the apparatus to the Smithsonian Institution." Professor Henry accepted the offer and "appointed noon of the next day for the experiment."

When the apparatus was shown and the experiments made on the following day, Henry's intelligent interest and practical suggestions assisted Graham Bell to solve the difficulties he was laboring with in his harmonic system, and so won his heart that he was led to explain all his hopes and plans "for the transmission of the human voice by telegraph," to describe the apparatus he proposed making and to detail all his many experiments.

Professor Henry had a Reis telephone which he had purchased from Koenig, of Paris. He had experimented with it and knew that it was a form of philosophical apparatus designed to reproduce the musical pitch but not the quality of sound; that Reis designed the machine in the hope that it would accomplish in transmitting speech, all that Bourseul had suggested in 1854, an abstract of Bourseul's letter having appeared in a local magazine published in the city where Reis lived; that during the ten years these instruments had been on the market, they were not sold and purchased as speech-transmitting telephones, but as ingenious circuit-breaking devices employing several cells of battery and a broken current of unvarying strength, and were advertised only as "intended to transmit sounds to a distance by means of electricity."

While they were experimenting with the Reis telephone, Graham Bell explained that he was familiar with the mechanism of the receiving portion of the instrument, as there was one in the Institute of Technology, in Boston; that he had never before seen the transmitting portion of the apparatus, yet he had gained a knowledge from diagrams and descriptions of the instrument and its mode of operation. Then he explained to Professor Henry how widely different from Reis's work were the lines along which he was groping; how his experiments with the human ear had so strongly impressed him with the belief that by attaching a bit of iron to a membrane and properly vibrating it before an electromagnet with the human voice, an electrical current of varying strength would be set up in a wire: and how he had learned from Helmholtz that tones of different qualities required different forms of vibrations, if perfect reproduction was attained. He explained that he had no thought of devising any form of circuit-breaking instrument, but did hope to invent a self-contained magneto-generator that could be operated by the spoken word. If constructed according to his theory, the strength or flow of the current in this telephone would vary as varied the aerial impulses impinging upon the diaphragm of the transmitter, thus reproducing in the receiver each word spoken in the transmitter.

In Graham Bell's own words he "had deduced from the known laws of magneto-electricity that the vibrations in the electrical current induced by the to-and-fro movement of a magnet, or of inductive material, would correspond to the motions themselves; so that if the changes in the current were graphically shown, they would be respresented by a curve substantially similiar to the curve that would represent the motion of the inducing body.... If these to-and-fro movements were made to follow each other with sufficient rapidity to bring their vibrations within the limits of sound vibrations, the effect referred to would still follow, namely: that the undulatory or vibratory current would correspond in character to the character of the vibration that caused it and hence to the character of the aerial motions produced by that vibration. That is, that the variation in the current would not only correspond in frequency to the rapidity of the sonorous vibrations, but would also correspond to those minor details of the vibration that determine what we call the character or the quality of the sound produced."

Professor Henry was not only an eminent scientist, but was the leading electrician in America, and was broadminded enough to instantly perceive how great a conception was being unfolded before him. He knew that no one had ever before suggested the possibility of an undulating current having the capacity to reproduce speech in all its variations in tone; that this young man was in no sense following in the footprints of earlier workers, but boldly blazing his own pathway in an unexplored field of science, that the essential step towards success had been taken in the intellectual "conception of a new principle and mode of operation, of a new relation of means to an end," and that all that was required to develop this magnificent theory into a brilliant realization was sufficient electrical knowledge and the requisite mechanical skill.

Then Graham Bell put the question squarely to Professor Henry: "What would you advise me to do; publish it and let others work it out, or attempt to solve the problem myself?" Professor Henry replied that he believed the plan embodied the germ of a great invention, and advised him to work at it instead of publishing his theory. Graham Bell then explained that he felt that he did not possess "the electrical knowledge necessary to overcome the difficulties." Henry's reply was: *"Get it!"*

In writing to his father and mother about this visit, of Professor Henry's wise and generous counsel, and of his encouragement to get the necessary electrical knowledge, Graham Bell wrote: "I cannot tell you how much these two words have encouraged me. I live too much in an atmosphere of discouragement for scientific pursuits.... Such a chimerical idea as telegraphing *vocal sounds* would, indeed, to *most minds*, seem scarcely feasible enough to spend time in working over. I believe, however, that it is feasible, and that I have got the clue to the solution of the problem." Again he stated: "The appreciation of Professor Henry acted as a stimulus to the development of the speaking-telephone. In spite of my efforts to concentrate my thoughts upon multiple telegraphy, as Mr. Sanders and Mr. Hubbard wished me to do, my mind was full of it. All that I read upon electrical subjects seemed to be viewed from the standpoint of the speaking-telephone."

Several years later he told the members of the American Association for the Advancement of Science that: "It is from scientific men that my work of the last six years has received

its earliest and kindest recognition. I gratefully remember the encouragement which I received from the late Professor Henry, at a time when the speaking telephone existed only in theory. Indeed, it is greatly due to the stimulus of his appreciation that the telephone became an accomplished fact."

Thus, early in 1875, and a year before he applied for a patent, Alexander Graham Bell's conception of the electric speaking telephone was theoretically perfect, and in every way adequate to the transmission of speech. But mechanically and electrically it did not exist until the summer of 1875. First, owing to the state of the art at that period. For prior to the issuance of the Bell patent there was nothing on record to justify electricians in assuming that sound waves in themselves would possess force sufficient to generate the necessary current to properly actuate a receiver at the distant end of a wire. Nor did electricians then understand that telephone messages could be transmitted with an expenditure of less than one hundred millionth part of the current required to telegraph a message, or that a telephone diaphragm takes only about a thousandth part of a second, to attain its full movement. Second, owing to lack of funds. Third, because in the previous autumn, he had agreed to devote all his spare time to developing the autograph system of telegraphy for which he had obtained letters-patent. His partners believed that would prove more immediately valuable than any other of his inventions, and could perceive no commercial value in a telephone, "a mere scientific toy" that no one would have any use for.

Incidentally it may be added that in 1874, there were 175,735 miles of Western Union land wires, over which it was then the practice to send one message at a time, at the rate of from 20 to 40 words per minute by the Morse manual method, and 50 words per minute by the Phelps printer. In 1872 the Stearns duplex assumed a practical form, but it was not introduced until after 1874, and then came the quadruplex.

In the summer of 1874, Mr. Thomas Sanders, of Haverhill, Massachusetts, offered to assist Graham Bell in obtaining patents for his telegraphic inventions. Graham Bell has stated that "it was decided to file a caveat, and for this purpose we employed Mr. Joseph H. Adams, of Boston, as our solicitor. A few days after placing the matter in Mr. Adams' hands, Mr. Gardiner G. Hubbard, of Cambridge, not knowing of my negotiations with Mr. Sanders offered to enter into a similiar arrangement with

me. The result was that Messrs. Sanders and Hubbard both became interested in my telegraphic inventions."

Mr. Hubbard's account of the manner in which he became interested in Graham Bell's inventions, is thus described: "In August or September, 1874, Mr. Bell was playing on the piano at my house and suddenly stopped and asked me if I knew that in singing into the piano the proper note would respond, that is, if he sang the note 'do,' *do* would respond from the piano. That if two pianos in different places were connected by a wire, and the key of one was played upon, both being connected in a telegraphic circuit, the other would respond. I then asked him what value there was to that fact. He replied that by means of it telegraphic communications could be carried on between two places to much greater advantage than by the Morse instruments. I told him that I had been interested many years in the postal telegraph and in telegraphy in general, and that if he had an invention of that kind I should have no objection to furnishing the funds to take out a patent, as one of my oldest friends in Washington had great skill in that matter and considerable skill in telegraph patents. He said that he was sorry, but that he had already made an arrangement of a similar kind with Mr. Sanders, but that Mr. Sanders might be disposed, in consideration of my greater experience in such matters, to surrender a portion of his interest in the invention to me, and that he would make a like surrender. This conversation resulted in an arrangement with him and Mr. Thomas Sanders, who was then associated with him, by which I became one-third owner in Mr. Bell's telegraphic inventions.... I always said that under our agreement we could not claim Mr. Bell's inventions for the transmission of speech. Mr. Sanders took a different view; Mr. Bell agreed with me in opinion. Finally we referred the question to Mr. Pollock, our attorney. He thought that considering all the circumstances, as we had advanced all the funds which led to the invention, it should be given to us even if not included strictly in the terms of the agreement. .... During the summer and autumn of 1875, Mr. Bell's mind seemed to me to be occupied with the electrical transmission of speech a great deal more than was to my pecuniary advantage, as I did not then believe the transmission of speech could ever be made commercially valuable, and I at several times remonstrated with him for spending so much time upon the subject.... I wanted him to spend his time upon instruments that would

transmit many musical notes simultaneously, or upon an autograph telegraph upon which he was working, as I believed such instruments would be of more pecuniary value than any instrument for transmitting speech."

Later, Graham Bell said: "My understanding always was that the speaking-telephone was included in the inventions that belonged to the Messrs. Hubbard and Sanders from the autumn of 1874, but I found at a later period that they had not had this idea, which might account for the little encouragement I received to spend time on experiments relating to it. Even as late as 1876 when the telephone was an assured success Mr. Hubbard generously offered to relinquish to me all right and title to that invention, as he was inclined to think it was outside our original understanding."

On February 20, 1877, Thomas Sanders said: "I heard of Professor Bell soon after his arrival in Boston in the spring of 1871, as a teacher of Visible Speech. As I had a deaf and dumb son, I was anxious to avail myself of his skill in teaching the deaf to speak. I first met him at Miss Fuller's school in Pemberton Square, Boston, and met him frequently during the autumn of 1871. We became very intimate. He also frequently visited my house, and took a great interest in my boy. These same relations of intimacy existed throughout the winter of 1871-72. In the autumn of 1872 I placed my boy under his charge at 35 West Newton Street, Boston. He remained there during the winter. I frequently visited the house, and was aware that Mr. Bell was experimenting in telegraphy. Professor Bell came to my mother's house in Salem in October, 1873, and made it his home during that winter. It was at some time during the early part of his residence in Salem that he communicated to me his idea of multiple telegraphy—the simultaneous transmission of messages on the same wire in opposite directions. I remember, perfectly, assisting him in the construction of apparatus previous to the 1st of January, 1874. During the winter of 1873-74, Mr. Bell was very much interested in the accomplishment of the simultaneous transmission of messages over the same wire.... The (organ) experiments satisfied me of the ultimate success of his invention or discovery, so much so that in September or October, 1874, I agreed to pay all expenses of securing patents and of constructing instruments to forward the invention, in consideration of one-half interest in the patents, which arrangement still exists in a modified form."

Leaving Washington, after his visit with Professor Henry, Graham Bell stopped in New York and explained his harmonic multiple telegraphic system to President Orton and Electrician Prescott of the Western Union. They invited him to bring his apparatus to New York and show what it could do on a commercial circuit. Accepting this invitation he returned to Boston, secured his instruments, and was in New York the following Monday. A few days later Graham Bell, in a letter to his father and mother, wrote: "Mr. Orton and Mr. Prescott both devoted a large portion of their time in discussing with me the whole plan from its theoretical point of view. Mr. Smith, the manager of the experimental room, was absent from town, but was telegraphed for. He replied that he could not come till next morning. Tuesday forenoon we had batteries connected and I tuned up my instruments. They went like clock work. I have come to the conclusion that by a happy chance they are much more perfect than I thought at first. The signals are as clear, sharp and rapid as with the ordinary Morse sounder. I connected two transmitters and two receivers on only one line and two messages were sent simultaneously. We had 100 cells of a battery, and all went well on our artificial circuit. Mr. Prescott then said he would like to see them tried on a real line wire. He telegraphed to Philadelphia to have two wires crossed there so as to give us (practically) a continuous wire from New York to Philadelphia and back. The electro-magnets I employed were not intended for trial on a long line. They were wound with coarse wire and the resistance was only 3 ohms. Ordinary electro-magnets for actual service on a line have a resistance of about 200 to 600 ohms. None of us, therefore, expected the instruments to work without stronger magnets. But they *did work.* The signals, though feeble, came sharply and concisely through the 200 miles of line wire!!! I suggested trying stronger magnets, so Mr. Prescott ordered the instruments to be taken to the workshop and stronger magnets placed on them."

Later Graham Bell stated that on the following day he desired to take the apparatus to the president of the Atlantic & Pacific Telegraph Company. But after a long conference between Mr. Orton and Mr. Prescott, he was prevailed upon to leave them with the Western Union.

CHAPTER XXVI.

TRANSFORMING THE TELEPHONE THEORY INTO TANGIBILITY.

From his visits to Professor Henry and Mr. Orton, Graham Bell returned elated in spirit, but "thoroughly worn out physically," and was "beginning to realize the cares and anxieties of being an inventor." His partners were urging him to complete both telegraph systems as rapidly as possible, and in the effort to comply with their wishes and yet keep his professional work up, the mental and the physical strain became unbearable. So he decided "to give up all professional work for some weeks." Thus he turned his private pupils and his classes over to others, on the supposition that he would be prepared to take them again in a month. But several months passed before he again fully entered upon his educational work, and only then because he had exhausted his own funds and had spent all the money he cared to borrow from friends.

Referring to this period Mr. Hubbard said: "Mr. Bell has a very inventive mind, and I have often begged him to give up his profession and devote himself to telegraphy; but his reply uniformly was, that he would not devote any of his time to telegraphy, wonderful as he felt the invention to be, if he did not expect thereby to make money enough to devote his life to his professional work, for it was a great damper to his spirits to be compelled to ask his pupils, most of whom were poor, to pay him for his services and lectures to them."

On March 18, 1875, he wrote, in explanation of this step: "Flesh and blood could not stand much longer such a strain as I have had upon me. Professional work is all in confusion; and the only way is to cut the Gordian knot and throw up everything until the end is achieved." Later he wrote: "I put off all my pupils and classes from the early part of March until the 12th of April. It is hardly necessary to state that by that time my professional work had become thoroughly disorganized, and that I began to be in real want. Still, the emoluments derived from my connection with the Boston Universty and the fees received from a few private pupils, gave me a small income which enabled me, by severe economy, to get along. Towards the end of May or the commencement of June, however, I began to feel that a change of some kind was imperatively necessary. My profession was gradually dwindling away, and but for the kindness of my

colleague, the late Prof. Lewis B. Monroe, in advancing to me sums of money that would in the future become due to me from my lectures in the Boston University, I would not have been able to get along at all. My pecuniary condition was not known or fully understood by Mr. Sanders and Mr. Hubbard. They had agreed to pay the expenses of my experiments; but no arrangement had been made to remunerate me for my time. On account of the peculiar relations then beginning to arise between myself and Mr. Hubbard, I was unwilling that he should know of the condition in which I was placed, and could not bear the idea of asking him to modify the arrangement that had been entered into, so as to contribute any money to my support. The peculiar relations to which I refer will be understood when I say that Mr. Hubbard's daughter is now my wife...."

March 6, 1875, Graham Bell filed his application for a patent on an autographic system of telegraphy, in which receivers tuned to a definite pitch vibrated in unison with the succession of electric impulses sent out from their respective transmitters, and thus controlled the action of a recording lever operating on an ink-ribbon, so that "an exact copy of any message, picture, or other object impressed or written upon the metallic foil can be transmitted to and obtained at the receiving end."

May 24, 1875, Graham Bell wrote to his father and mother: "I am so immersed in telegraphy and science that I find it impossible to write freely about anything else, but I feel that at the present time you can scarcely be inclined to listen to anything I have to say on such subjects. Since I gave up professional work and devoted myself exclusively to telegraphy, I have been steadily gaining health and strength.... The autograph arrangement is rapidly approaching completion. Already I can copy handwriting quite legibly, though not yet neatly. The rate of transmission by means of my instruments will be exactly ten times more rapid than 'Bakewell's autograph telegraph,' in which the rate is 300 letters per minute.... Every moment of my time is devoted to the study of electricity and to experiments. The subject broadens. I think that the transmission of the human voice is much more nearly at hand than I had supposed. However, this is kept in the background just now, as every effort is to be made to complete the autograph arrangement, so as to have it used on some line.... I fear that this telegraphic business may force me to remain the greater portion of the summer

here, but I cannot tell yet, so many details have to be worked out. My inexperience in such matters is a great drawback. However, Morse conquered his electrical difficulties although he was only a painter, and I don't intend to give in either till all is completed."

In this autograph telegraph system he utilized his multiple telegraph apparatus for the purpose of reproducing in distant places a *fac simile* of a picture or a handwriting, so that written messages could be transmitted. In his own words: "The vibrations of the tuned reed receivers of my multiple telegraph apparatus were used to make or break a local circuit through the instrumentality of what I have termed 'vibratory circuit breakers,' and so cause marks to be recorded on paper or other material."

On June 2, 1875, he wrote to Mr. Hubbard: "I have accidentally made a discovery of the very greatest importance in regard to the transmitting instruments.... I have succeeded today in transmitting signals *without any battery whatever!* The musical note produced at the receiving end was sensibly the equivalent of that at the transmitting end in loudness as well as pitch."

This important discovery in transmitting telegraphic signals was perceived while making an experiment to ascertain whether the receiving reeds in his autograph system "were properly tuned to their corresponding interrupters." There were three experimental stations upon a single line wire, and when plucking the reed at one transmitter, its peculiar tone and *timbre* was reproduced at the required receiving station, although no current was on the line. Graham Bell reasoned that this action was probably due to the residual magnetism in the coils, after the heavy battery currents had been cut off, and it solved the one great difficulty in regard to the practical operation of the various instruments he had devised for the reproduction of speech.

As he says, it was purely an accidental discovery. But so was that apple which is said to have fallen from the tree under which young Newton was resting. The fact that the musical note produced was the same as the note transmitted might easily have escaped the attention of many an earnest worker. And here is where the true genius of the man is exalted in the history of the invention of the telephone. For had Graham Bell not instantly perceived the almost imperceptible response to his accidental touch, and accurately reasoned the cause, months and even years

of additional labor might have been necessary before the problem of speech transmission would have been accurately solved. But his trained faculties enabled him to work out in his mind by a process of pure scientific reasoning the cause that wrought the effect, to perceive its value when applied to his telephone experiments, and then to devise a method and a means by which similar results could be obtained in the transmission of speech. Incidentally, it was also an excellent illustration of the important part that incidents slight and insignificant in themselves often play in great achievements.

The words telephone and microphone were used half a century before Graham Bell began his experiments, and their coinage is credited to Wheatstone. Thus there were sound telephones and steam telephones and musical telephones long before 1876. In Germany the speaking tube was sometimes called 'the telephone.' But not until Graham Bell showed the world how to transmit speech electrically was there an electric-speaking telephone.

Graham Bell had previously designed harmonic telephones for use in his multiple system of telegraphy, that is, telephones for the transmission of musical notes, and he had designated them as telephones in his application for a patent. But as a result of this accidental discovery, he now set about making the first of the electric-speaking telephones, and completed this crude instrument just one year to a day prior to certain memorable tests at the Centennial that will be referred to later.

Graham Bell has stated that this accidental discovery convinced him of his error in being led to believe "that magneto-electric currents generated by the vibration of permanent magnets or reeds, would be too feeble to produce any useful practical results." And thus he immediately gave instructions for making this first of all telephones. He states that when the transmitter was ready, "I was anxious to try the instrument at once, and could not wait to have the duplicate receiver made, so I attempted to use it with one of my harmonic receivers. Upon passing a battery current through the coils of the instrument, however, the attraction of the magnet was so great as to tear the heavy armature away from the membrane."

Then other membranes were secured, pieces of iron were glued to them, and dispensing with the use of the battery current, the effort to transmit speech was again earnestly undertaken.

These experiments were carried on in the factory of Charles Williams, Jr., 109 Court Street, Boston, where the first telephone was made. It was a very noisy shop with more or less vibration from heavy machinery constantly in operation; a place entirely unsuitable in which to experiment with an instrument so delicately responsive as the telephone. Arranging the crude instruments on the experimental line Graham Bell talked and shouted at the stretched membrane of the transmitter placed in the upper room while his assistant, Thomas A. Watson, was in the room down-stairs listening with his ear pressed against the reed of the harmonic receiver temporarily taken from the telegraph set. Graham Bell thus describes the occurrence: "I was interrupted by the sudden appearance of Mr. Watson who had rushed up-stairs in a state of great excitement, and who declared that he had heard vocal sounds proceed from the instrument to which he had been listening, and that he could almost understand what was said. We then changed places, but I was unable to hear anything on that occasion. This inability I attributed at the time to the noise of the machinery in the work-shop, and to the fact that Mr. Watson (then about 21 years of age) was unable to throw out his voice with sufficient force to set the membrance of his telephone into good vibration."

While the results of these experiments were not all that might have been expected, they were sufficient to encourage Graham Bell not only to reconstruct his instruments, using heavier membranes and lighter armatures, but they convinced him that here was the tangible realization of his long-held theory of speech transmission.

Incidentally it may be added that in 1879, these reconstructed instruments were taken by a number of witnesses to the precise place in the work-shop where Graham Bell tried the originals in 1875, and no words could be made out. They were immediately taken to a quiet place and conversation was successfully carried on. Again, some of the membranes used in 1875 were made of sheepskin and others of gold-beater's skin. The articulation of the instruments having the latter was not so distinct, but the sheepskin membranes soon became damp by the action of the breath, and the articulation was then much less distinct.

June 28, 1875, he wrote: "Mr. Hutchings (the organ builder) kindly devoted the whole of this afternoon to the construction

of a steel reed for me. One of the latest receiving instruments was inclosed in a wooden box and had its armature so arranged as to be set in vibration by a current of air passed through the box. The instrument was completed this evening in time for trial. Mr. Hutchings operated the reed in the little room upstairs (William's office) while I observed the effect upon a receiving instrument placed in the basement of the building. The sound was so perceptible that I found it unnecessary to place my ear against the instrument. The vibration of the armature could also be seen and felt. No battery nor permanent magnet was used." The impulses were generated through "the vibration of the armature acting upon the residual magnetism of the electro-magnet and armature," after the battery current was cut off.

July 1, 1875, Graham Bell wrote to Mr. Hubbard: "The experiment to which I alluded when I saw you last promises to be a grand success. On singing this afternoon in front of a stretched membrane attached to the armature of the electro-magnet, the varying pitch of the voice was plainly perceptible at the other end of the line, no battery nor permanent magnet being employed. When the vibrations are received upon another stretched membrane in place of a steel spring, it is possible, nay, it is probable that the *timbre* of the sound will be perceived. I hope to try the experiment to-morrow afternoon.

"This morning in dipping into a French work upon Telegraphy, I came across a full description of the Type-Telegraphe de M. Bonelli. I find it to be identical with our autograph arrangement, save that five telegraph wires are required instead of one for transmission."

August 14, 1875, Graham Bell wrote to Mr. Hubbard: "On glancing back over the line of electrical experiments, I recognize that the discovery of the magneto-electric current generated by the vibration of the armature of an electro-magnet in front of one of the poles is the most important point yet reached. I believe that it is the key to still greater things. The effects produced, though slight in themselves, appear to me so great in proportion to their cause that I feel sure that the future will discover means of utilizing currents obtained in this way on actual telegraph lines....

"I can see clearly that the magneto-electric current will not only permit of the actual copying of *spoken utterance*, but of the

simultaneous transmission of *any* number of musical notes (hence messages) without confusion.

"The more I think of it the more I see that the method of making and breaking contact so many times per second, is only the *first stage* in the development of the idea.

"When we can create a pulsatory action of the current which is the *exact equivalent* of the aerial impulses, we shall certainly obtain exactly similar results. Any *number* of *sounds* can travel through the same wire without confusion, and any number should pass along the same wire.

"It should even be possible for a number of spoken messages to traverse the same circuit simultaneously, for an attentive ear can distinguish one voice from another, although a number are speaking together."

In his original conception Graham Bell had theoretically planned a self-contained magneto generator to be operated by the spoken word impinging upon the diaphragm that in turn generated magnetic and electric waves similar in form to the sound waves. Then he was led to believe that sound waves created by the voice would have insufficient strength to produce the necessary respondent vibratory motion of the soft iron armature in a magnetic field. So he endeavored to devise a plan by which the current would flow on the line from a battery, the amount of current passing being regulated by the amount of resistance moved in or out of the circuit by the action of the voice upon the membrane. Then he cut off the battery and secured his effects through impulses generated through "the vibration of the armature acting upon the residual magnetism of the electro-magnet." Before the end of August he was able to clearly perceive the virtue in a permanent magnet telephone, an instrument that might be likened to a miniature dynamo with its armature driven by the sound-waves issuing from the vocal organs; and this was the only type of commercial telephone used during the early years of the exploitation of the invention.

(*To be continued.*)

SPECIAL REPORT UPON THE DEAF, BASED ON THE RETURNS OF THE TWELFTH CENSUS.[1]

PREPARED BY ALEXANDER GRAHAM BELL, AS EXPERT SPECIAL AGENT OF THE CENSUS OFFICE.

(*Continued from page 47*).

In Table XLIV the deaf are considered by causes of deafness in relation to degree of deafness, deaf relatives, and consanguinity of parents.

The results contained in Table XLIV relating to total and partial deafness are shown graphically in Diagram 37 (page 140).

Broad groups.—It appears that affections of the middle ear result chiefly in partial deafness, and affections of the internal ear chiefly in total deafness.

Subgroups.—Suppurative affections of the middle ear appear to be much more productive of total deafness than nonsuppurative, or catarrhal, affections. Affections of the labyrinth result chiefly in partial deafness and affections of the auditory nerve in total deafness.

Principal assigned causes.—From Diagram 37 it appears that of the diseases affecting the middle ear, scarlet fever seems to be the only one producing total deafness in a majority of the cases. Catarrh produces chiefly partial deafness. Of the diseases affecting the internal ear, meningitis and brain fever produce chiefly total deafness.

In regard to the unclassified causes, the deafness is chiefly total among the congenital cases and partial among those deaf from old age, military service, or hereditary causes.

More than 80 per cent of those deaf from influenza, catarrh, or colds were only partially deaf, and more than 80 per cent were totally deaf among those deaf from meningitis, brain fever, and among the congenital cases. More than 85 per cent were only partially deaf among those deaf from old age, military service, or hereditary causes.

In Table XLV the deaf are shown by causes of deafness, in relation to sex, race, and nativity of the whites.

[1] A reprint of "Special Reports: the Blind and the Deaf," in the part relating to the Deaf; issued by the Department of Commerce and Labor, Bureau of the Census, Washington, 1906. Commenced in the October, 1906, number of the REVIEW.

TABLE XLIV.—THE DEAF, BY DEGREE OF DEAFNESS, DEAF RELATIVES, CONSANGUINITY OF PARENTS, AND CAUSES OF DEAFNESS.

CAUSE OF DEAFNESS.	Total.	DEGREE OF DEAFNESS.		DEAF RELATIVES.[1]			CONSANGUINITY OF PARENTS.		
		Totally deaf.	Partially deaf.	*a*, *b*, or *c* relatives.	No *a*, *b*, or *c* relatives.	Not stated.	Parents cousins.	Parents not cousins.	Not stated.
All causes	89,287	37,426	51,861	26,221	54,260	8,806	4,065	75,530	9,692
Classified	47,967	18,164	29,803	13,389	31,212	3,366	1,610	42,705	3,652
Unclassified	31,205	16,960	14,255	9,998	18,031	3,176	2,183	25,281	3,741
Unknown	10,115	2,312	7,803	2,834	5,017	2,264	272	7,544	2,299
Classified:									
External ear	871	207	664	237	559	75	29	760	82
Impacted cerumen	357	71	286	105	226	26	3	324	30
Foreign bodies in ear	297	50	247	79	191	27	9	256	32
Miscellaneous (external ear)	217	86	131	53	142	22	17	180	20
Middle ear	34,801	10,227	24,574	10,950	21,285	2,566	1,238	30,824	2,739
Suppurative	17,533	7,390	10,143	4,551	11,809	1,173	738	15,510	1,285
Scarlet fever	7,424	4,145	3,279	1,608	5,394	422	285	6,647	492
Disease of ear	4,210	1,365	2,845	1,316	2,601	293	222	3,683	305
Measles	2,469	953	1,516	682	1,642	145	101	2,194	174
Influenza	1,776	273	1,503	468	1,099	209	45	1,524	207
Other (suppurative)	1,654	654	1,000	477	1,073	104	85	1,462	107
Nonsuppurative	17,260	2,836	14,424	6,397	9,474	1,389	500	15,309	1,451
Catarrh	11,702	1,354	10,348	4,701	6,050	951	304	10,450	948
Colds	3,074	580	2,494	860	1,926	288	81	2,666	327
Other (nonsuppurative)	2,484	902	1,582	836	1,498	150	115	2,193	176
Miscellaneous (middle ear)	8	1	7	2	2	4	.....	5	3
Internal ear	12,295	7,730	4,565	2,702	9,368	725	343	11,121	831
Labyrinth	2,726	661	2,065	721	1,783	222	88	2,365	273
Malarial fever and quinine	1,636	439	1,197	456	1,061	119	67	1,427	142
Other (labyrinth)	1,090	222	868	265	722	103	21	938	131
Nerve	9,561	6,931	2,430	1,457	7,432	472	251	8,582	528
Meningitis	3,991	3,609	382	446	3,400	145	83	3,741	167
Brain fever	2,013	1,744	269	260	1,670	83	59	1,859	95
Typhoid fever	2,055	908	1,147	515	1,410	130	60	1,839	156
Other (nerve)	1,302	670	632	236	952	114	49	1,143	110
Brain center for hearing	129	96	33	13	103	13	4	112	13
Miscellaneous (internal ear)	79	42	37	11	50	18	.....	62	17
Unclassified:									
Congenital	14,472	12,607	1,865	6,155	7,273	1,044	1,710	11,322	1,440
Old age	3,361	115	3,246	399	1,634	1,028	38	2,369	954
Military service	3,242	375	2,867	536	2,440	266	40	2,897	305
Falls and blows	2,243	1,050	1,193	449	1,626	168	95	1,933	215
Sickness	2,143	1,002	1,141	418	1,511	214	80	1,786	277
Fever	1,436	758	678	292	1,051	93	62	1,257	117
Hereditary	909	122	787	850	19	40	57	799	53
Miscellaneous (unclassified)	3,399	921	2,478	899	2,177	323	101	2,918	380

[1] Symbols for deaf relatives—*a*, deaf brothers, sisters, or ancestors; *b*, deaf uncles, aunts, cousins, or other relatives not *a*, *c*, or *d*; *c*, deaf children (sons or daughters); *d*, deaf husbands or wives.

DIAGRAM 37.

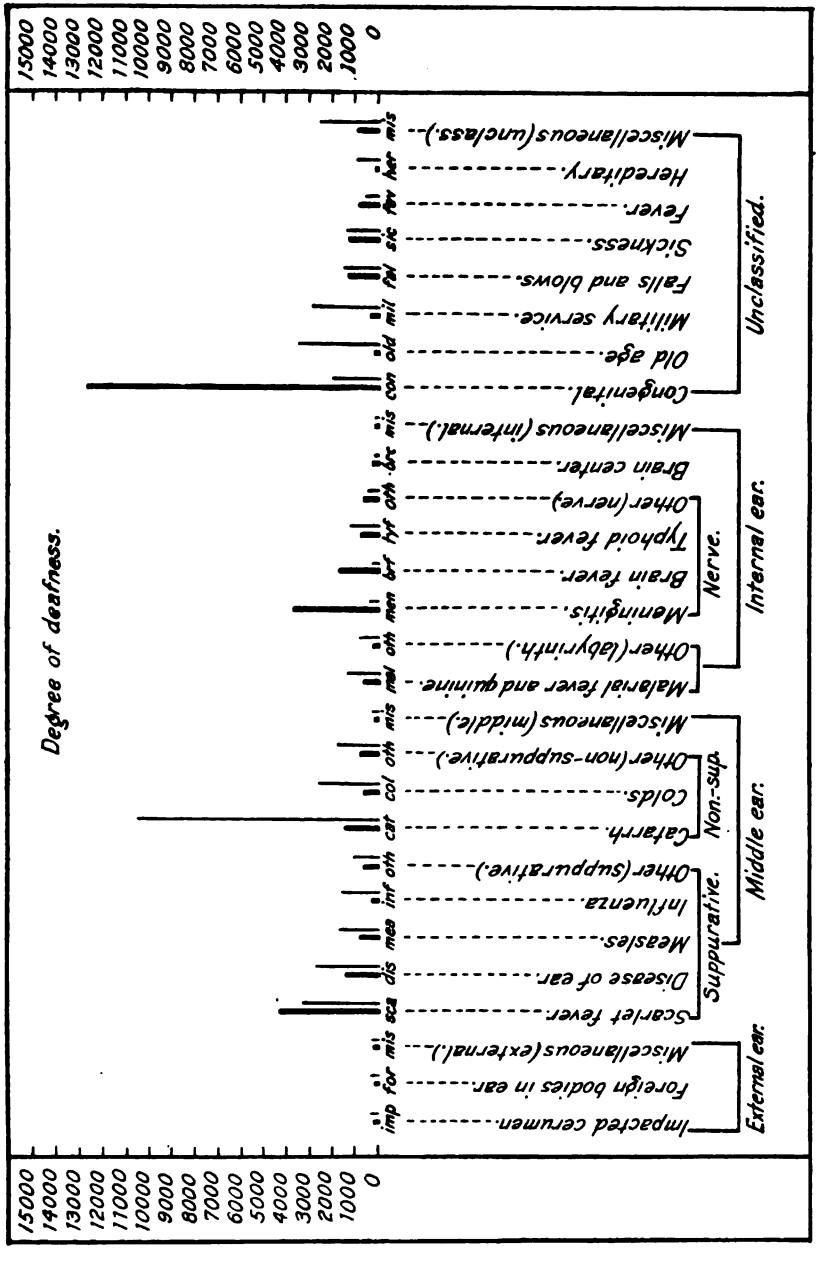

Degree of deafness.
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
External ear.
Middle ear.
Internal ear.
Unclassified.
Suppurative.
Non-sup.
Nerve.
imp Impacted cerumen.
for Foreign bodies in ear.
mis Miscellaneous (external.)
sca Scarlet fever.
dis Disease of ear.
mea Measles.
inf Influenza.
oth Other (suppurative.)
ear Catarrh.
col Colds.
oth Other (non-suppurative.)
mis Miscellaneous (middle.)
mal Malarial fever and quinine.
oth Other (labyrinth.)
men Meningitis.
bra Brain fever.
typ Typhoid fever.
oth Other (nerve)
bra Brain center.
mis Miscellaneous (internal.)
con Congenital.
old Old age.
mil Military service.
fal Falls and blows.
sic Sickness.
fev Fever.
her Hereditary.
mis Miscellaneous (unclass.)
Totally deaf.
Partially deaf.

TABLE XLV.—THE DEAF, BY SEX, RACE, NATIVITY OF WHITES, AND CAUSES OF DEAFNESS.

CAUSE OF DEAFNESS.	Total.	SEX.		RACE.		NATIVITY OF WHITES.			COLORED.		
		Male.	Female.	White.	Colored.	Native.	Foreign.	Unknown.	Negro.	Indian.	Mongolian.
All causes	89,287	46,915	42,372	84,361	4,926	69,865	13,786	710	4,649	273	4
Classified	47,967	23,979	23,988	46,441	1,526	39,777	6,400	264	1,439	87	.....
Unclassified	31,205	17,720	13,485	28,467	2,738	23,104	5,055	308	2,586	150	2
Unknown	10,115	5,216	4,899	9,453	662	6,984	2,331	138	624	36	2
Classified:											
External ear	871	546	325	807	64	638	165	4	58	6	.....
Impacted cerumen	357	276	81	340	17	253	85	2	13	4	.....
Foreign bodies in ear	297	157	140	269	28	214	53	2	27	1	.....
Miscellaneous (external ear)	217	113	104	198	19	171	27	.....	18	1	.....
Middle ear	34,801	16,241	18,560	33,968	833	29,033	4,768	167	770	63	.....
Suppurative	17,533	8,133	9,400	17,060	473	14,950	1,994	116	442	31	.....
Scarlet fever	7,424	3,497	3,927	7,329	95	6,389	887	53	89	6	.....
Disease of ear	4,210	2,063	2,147	3,993	217	3,625	345	23	202	15	.....
Measles	2,469	1,098	1,371	2,397	72	2,135	242	20	67	5	.....
Influenza	1,776	762	1,014	1,740	36	1,417	314	9	34	2	.....
Other (suppurative)	1,654	713	941	1,601	53	1,384	206	11	50	3	.....
Nonsuppurative	17,260	8,106	9,154	16,900	360	14,078	2,771	51	328	32	.....
Catarrh	11,702	5,565	6,137	11,568	134	10,047	1,496	25	118	16	.....
Colds	3,074	1,387	1,687	2,967	107	1,954	1,007	6	98	9	.....
Other (nonsuppurative)	2,484	1,154	1,330	2,365	119	2,077	268	20	112	7	.....
Miscellaneous (middle ear)	8	2	6	8	.....	5	3	.....	.....	.....	.....
Internal ear	12,295	7,192	5,103	11,666	629	10,106	1,467	93	611	18	.....
Labyrinth	2,726	1,698	1,028	2,474	252	2,065	402	7	250	2	.....
Malarial fever and quinine	1,636	846	790	1,439	197	1,296	139	4	196	1	.....
Other (labyrinth)	1,090	852	238	1,035	55	769	263	3	54	1	.....
Nerve	9,361	5,371	3,990	8,991	370	7,875	1,030	86	358	12	.....
Meningitis	3,991	2,355	1,636	3,824	167	3,648	118	58	165	2	.....
Brain fever	2,013	1,189	824	1,965	48	1,703	251	11	47	1	.....
Typhoid fever	2,055	1,054	1,001	1,961	94	1,516	432	13	91	3	.....
Other (nerve)	1,302	773	529	1,241	61	1,008	229	4	55	6	.....
Brain center for hearing	129	75	54	124	5	104	20	.....	2	3	.....
Miscellaneous (internal ear)	79	48	31	77	2	62	15	.....	1	1	.....
Unclassified:											
Congenital	14,472	7,668	6,804	12,789	1,683	11,371	1,180	238	1,616	66	1
Old age	3,361	1,727	1,634	3,181	180	2,081	1,094	6	167	13	.....
Military service	3,242	3,231	11	3,130	112	2,517	609	4	109	3	.....
Falls and blows	2,243	1,417	826	2,046	197	1,473	558	15	183	14	.....
Sickness	2,143	1,020	1,123	1,907	236	1,348	543	16	200	35	1
Fever	1,436	764	672	1,318	118	1,087	219	12	111	7	.....
Hereditary	909	429	480	894	15	791	98	5	15	.....	.....
Miscellaneous (unclassified)	3,399	1,464	1,935	3,202	197	2,436	754	12	185	12	.....

TABLE XLVI.[1]—PER CENT DEAF FROM EACH SPECIFIED CAUSE, BY PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, RACE, DEAF RELATIVES, AND CONSANGUINITY OF PARENTS.

CAUSE OF DEAFNESS.	Total	PERIOD OF LIFE WHEN DEAFNESS OCCURRED.		DEGREE OF DEAFNESS		SEX.		RACE.						DEAF RELATIVES.		CONSANGUINITY OF PARENTS.	
								Total.		White.		Colored.					
		Childhood (under 20).	Adult life (20 and over).	Totally deaf.	Partially deaf.	Male.	Female.	White.	Colored.	Native.	Foreign born.	Negro.	Indian.	a, b, c relatives.	No a, b, c relatives.	Parents cousins.	Parents not cousins.
All causes	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Classified	53	54	54	48	57	51	56	55	30	56	46	30	32	51	57	39	56
Unclassified	34	39	30	45	27	37	31	33	55	33	36	55	55	38	33	53	33
Unknown	11	5	15	6	15	11	11	11	13	9	16	13	13	10	9	6	9
Classified:																	
External ear	0	0	1	0	1	1	0	0	1	0	1	1	2	0	1	0	1
Impacted cerumen	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Foreign bodies in ear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous (external ear)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle ear	38	36	43	27	47	34	43	40	16	41	34	16	23	41	39	30	40
Suppurative	19	25	11	19	19	17	22	20	9	21	14	9	11	17	21	18	20
Scarlet fever	8	13	1	11	6	7	9	8	1	9	6	1	2	6	9	7	8
Disease of ear	4	5	3	3	5	4	5	4	4	5	2	4	5	5	4	5	4
Measles	2	3	1	2	2	2	3	2	1	3	1	1	2	2	3	2	2
Influenza	1	0	3	0	2	1	2	2	0	2	2	0	1	1	2	1	2
Other (suppurative)	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1
Nonsuppurative	19	10	32	7	27	17	21	20	7	20	20	7	12	24	17	12	20
Catarrh	13	5	24	3	19	11	14	13	2	14	10	2	6	17	11	7	13
Colds	3	1	5	1	4	2	3	3	2	2	7	2	3	3	3	2	3
Other (nonsuppurative)	2	2	2	2	3	2	3	2	2	2	1	2	2	3	2	2	2
Miscellaneous (middle ear)	0	0	0	0	0	0	0	0	.....	0	0	.....	.....	0	0	.....	0
Internal ear	13	17	9	20	8	15	12	13	12	14	10	13	6	8	17	8	14
Labyrinth	3	1	4	1	3	3	2	2	5	2	2	5	1	2	3	2	3
Malarial fever and quinine	1	1	2	1	2	1	1	1	4	1	1	4	0	1	1	1	1
Other (labyrinth)	1	0	2	0	1	1	0	1	1	1	1	1	0	1	1	0	1
Nerve	10	15	4	18	4	11	9	10	7	11	7	7	4	5	13	6	11
Meningitis	4	7	0	9	0	5	3	4	3	5	0	3	1	1	6	2	4
Brain fever	2	3	0	4	0	2	1	2	0	2	1	1	0	0	3	1	2
Typhoid fever	2	2	2	2	2	2	2	2	1	2	3	1	1	1	2	1	2
Other (nerve)	1	1	1	1	1	1	1	1	1	1	1	1	2	0	1	1	1
Brain center for hearing	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Miscellaneous (internal ear)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.....	0
Unclassified:																	
Congenital	16	28	.....	33	3	16	16	15	34	16	8	34	24	23	13	42	14
Old age	3	.....	9	0	6	3	3	3	3	2	7	3	5	1	3	0	3
Military service	3	0	7	1	5	6	0	3	2	3	4	2	1	2	4	1	3
Falls and blows	2	3	1	2	2	3	1	2	4	2	4	3	5	1	2	2	2
Sickness	2	2	1	2	2	2	2	2	4	1	3	4	13	1	2	1	2
Fever	1	2	1	2	1	1	1	1	2	1	1	2	2	1	1	1	1
Hereditary	1	0	1	0	1	0	1	1	0	1	0	0	.....	3	0	1	1
Miscellaneous (unclassified)	3	2	6	2	4	3	4	3	4	3	5	4	4	3	4	4	3

[1] In this table the cipher "0" indicates less than 1 per cent; the figure "1" indicates 1 and less than 2 per cent; the figure "2," 2 and less than 3 per cent, etc.

Table XLVI shows the approximate percentage of the deaf of each class included in Tables XLII[1], XLIV, and XLV who lost hearing from the specified causes.

Period of life when deafness occurred.—Table XLVI shows that the percentage deaf from suppurative affections of the middle ear is more than twice as great among the deaf from childhood as among the deaf from adult life, and the proportion deaf from affections of the auditory nerve more than three times as great.

On the other hand, the proportion deaf from non-suppurative or catarrhal affections of the middle ear is more than three times as great among the deaf from adult life as among those deaf from childhood.

Degree of deafness.—The percentage congenitally deaf is eleven times as great among the totally as among the partially deaf, and the proportion deaf from affections of the auditory nerve more than four times as great. On the other hand, the percentage deaf from non-suppurative or catarrhal affections of the middle ear is nearly four times as great among the partially as among the totally deaf.

Sex.—The percentage deaf from affections of the internal ear is greater among males than females, and the proportion deaf from affections of the middle ear greater among females than males. The proportion born deaf and deaf from old age is about the same in either case. Military service and falls and blows are of course responsible for a greater proportion of cases among the males than the females.

Race.—The percentage deaf from affections of the middle ear is more than twice as great among the whites as among the colored. In the case of scarlet fever, eight times as great. On the other hand, the proportion deaf from malarial fever and quinine is four times as great among the colored as among the whites; and the proportion born deaf more than twice as great.

Nativity of whites.—The percentage deaf from the specified causes are larger among the native whites than the foreign born excepting in the case of colds, typhoid fever, old age, military service, falls and blows, and sickness. An extremely small percentage of the foreign born lost hearing from meningitis.

Colored races.—The proportion born deaf and deaf from affections of the internal ear is greater among the negroes than among the Indians; and the proportion deaf from affections of the middle ear,

[1] See February, 1908, number of the REVIEW.

old age, falls and blows, and indefinite "sickness" greater among the Indians than the negroes. More than 4 per cent of the negroes lost hearing from malarial fever and quinine, and less than 1 per cent of the Indians.

Deaf relatives.—The percentage born deaf and deaf from disease of ear, catarrh, and from "hereditary" causes is greater among those who have deaf relatives than among those who have not; and the percentage deaf from meningitis, brain fever, typhoid fever, old age, military service, falls and blows, and sickness is less.

Consanguinity of parents.—The most striking feature seems to be the large proportion congenitally deaf among those whose parents were cousins. The percentage congenitally deaf is nearly three times as great among those whose parents were cousins as among those whose parents were not; the percentage deaf from disease of ear is also larger, but only slightly. The percentage deaf from scarlet fever is less, but not to any great extent; and the percentage deaf from catarrh, though considerably less, is sufficiently great to give catarrh prominence among the assigned causes of deafness, both where the parents were cousins and where they were not.

Meningitis, old age, and military service are not at all prominent where the parents were cousins, but moderately so where they were not.

Out of a total of 89,287 deaf, 4,065, 4.5 per cent of the total or 5.1 per cent of those answering, reported that their parents were cousins; 75,530, 84.6 per cent of the total or 94.9 per cent of those answering, reported that their parents were not cousins; and in 9,692 cases, or 10.9 per cent of the whole, the question was not answered. Therefore at least 4.5 per cent of the deaf are the offspring of cousin-marriages.

Table XLVII shows the age and period of life when deafness occurred, the degree of deafness, and the deaf having deaf relatives, by consanguinity of parents, with the percentages resulting.

In the case of the deaf from birth the proportion whose parents were cousins is more than twice as great as when all the deaf are considered, 11.8 per cent of the deaf from birth being the children of cousins and 4.5 per cent of the whole of the deaf.

These would be the true percentages on the usual assumption that the ratios in "not stated" cases are substantially the same as in the cases stated, but in the present instance there is some reason for supposing that they may be different.

Some people are sensitive to questions concerning consan-

TABLE XLVII.—NUMBER AND PER CENT OF DEAF, BY AGE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, DEAF RELATIVES, AND CONSANGUINITY OF PARENTS.

AGE OR PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, AND DEAF RELATIVES.	Total.	CONSANGUINITY OF PARENTS.			PER CENT OF TOTAL.			PER CENT OF EACH CLASS.	
		Parents cousins	Parents not cousins.	Not stated.	Parents cousins.	Parents not cousins.	Not stated.	Parents cousins.	Parents not cousins.
Total	89,287	4,065	75,530	9,692	4.5	84.6	10.9	100.0	100.0
Period of life when deafness occurred:									
Childhood (under 20)	50,296	3,276	43,187	3,833	6.5	85.9	7.6	80.6	57.2
Adult life (20 and over)	35,924	725	30,731	4,468	2.0	85.6	12.4	17.8	40.7
Unknown	3,067	64	1,612	1,391	2.1	52.6	45.3	1.6	2.1
Degree of deafness:									
Totally deaf	37,426	2,525	31,560	3,341	6.8	84.3	8.9	62.1	41.8
Partially deaf	51,861	1,540	43,970	6,351	3.0	84.8	12.2	37.9	58.2
Deaf relatives:[1]									
a or *b* relatives	25,851	2,171	22,552	1,128	8.4	87.2	4.4	53.4	29.9
No *a* or *b* relatives	54,630	1,740	51,087	1,803	3.2	93.5	3.3	42.8	67.6
Not stated	8,806	154	1,891	6,761	1.7	21.5	76.8	3.8	2.5
Age when deafness occurred:									
Unknown	3,067	64	1,612	1,391	2.1	52.6	45.3	1.6	2.1
Indefinitely stated	4,630	115	3,333	1,182	2.5	72.0	25.5	2.8	4.4
Definitely stated	81,590	3,886	70,585	7,119	4.8	86.5	8.7	95.6	93.5
Birth	14,474	1,710	11,324	1,440	11.8	78.2	10.0	42.1	15.0
After birth, under 2	7,396	429	6,598	369	5.8	89.2	5.0	10.5	8.7
2 and under 5	10,536	509	9,423	604	4.8	89.5	5.7	12.5	12.5
Under 5	32,406	2,648	27,345	2,413	8.2	84.4	7.4	65.1	36.2
5 and under 10	7,018	248	6,306	464	3.5	89.9	6.6	6.1	8.3
10 and under 15	4,464	161	3,995	308	3.6	89.5	6.9	4.0	5.3
15 and under 20	4,061	130	3,672	259	3.2	90.4	6.4	3.2	4.9
Under 20	47,949	3,187	41,318	3,444	6.6	86.2	7.2	78.4	54.7
20 and under 40	16,588	382	14,856	1,350	2.3	89.6	8.1	9.4	19.7
40 and under 60	9,437	200	8,176	1,061	2.1	86.6	11.3	4.9	10.8
60 and under 80	6,595	105	5,427	1,063	1.6	82.3	16.1	2.6	7.2
80 and over	1,021	12	808	201	1.2	79.1	19.7	0.3	1.1

[1] Symbols employed—*a*, deaf brothers, sisters, or ancestors; *b*, deaf uncles, aunts, cousins, or other relatives not *a*, *c*, or *d*; *c*, deaf children (sons or daughters); *d*, deaf husbands or wives.

guinity in marriage, especially where defective offspring have appeared, and in such cases nonreply would be an easy means of evading the question. It may be possible, therefore, that the proportion having parents cousins may be larger among the "not stated" than the stated cases. However this may be, and whatever interpretation be put upon cases of nonreply, it is obvious that the true percentages, both in the case of parents cousins and parents not cousins, are greater than those noted in the tables, for the reason already given, viz, that these percentages are based upon totals that include the "not stated" cases.

It also appears that the percentage having parents cousins is greater among the deaf from childhood than the deaf from adult life; greater among the totally deaf than the partially deaf; and greater among those having *a* or *b* deaf relatives than among those who have not (*a* relatives are brothers, sisters, or ancestors; *b* relatives are uncles, aunts, cousins, or other relatives not *a, c,* or *d; c* relatives are sons or daughters; and *d* relatives are husbands or wives).

The percentage "not stated" is larger among the deaf from adult life than the deaf from childhood; and, in the case of the deaf from adult life, seems to be proportionally larger the more advanced the age when deafness occurred. This increase is accompanied by a corresponding decrease in the percentage having parents not cousins. The reason for this is not obvious.

Of those whose parents were cousins, 42.1 per cent were deaf from birth, and only 15 per cent of those whose parents were not cousins. It thus appears that the percentage deaf from birth is nearly three times as great (2.8) among the deaf whose parents were cousins as among those whose parents were not.

Of the deaf whose parents were cousins, 53.4 per cent, and of those whose parents were not, 29.9 per cent, have other members of their families deaf (*a* or *b* relatives). It thus appears that the percentage having *a* or *b* deaf relatives is nearly twice as great (1.8) among those whose parents are cousins as among those whose parents are not.

The converse fact also appears, viz, that the percentage having parents cousins is more than twice as great (2.6) among those who have *a* or *b* deaf relatives as among those who have not (relatives, 8.4 per cent; no relatives, 3.2).

Table XLVIII shows the number of deaf from the principal assigned causes, by consanguinity of parents, with the percentages resulting.

Table XLVIII shows that of the deaf whose parents were cousins, the assigned causes to which the largest percentages are attributed are the congenital and hereditary causes and disease of ear.

TABLE XLVIII.—NUMBER AND PER CENT DEAF FROM PRINCIPAL CAUSES, BY CONSANGUINITY OF PARENTS.

CAUSE OF DEAFNESS.	Total.	CONSANGUINITY OF PARENTS.			PER CENT.		
		Parents cousins.	Parents not cousins.	Not stated.	Parents cousins.	Parents not cousins.	Not stated.
Total	89,287	4,065	75,530	9,692	4.5	84.6	10.9
Causes of deafness:							
Affections of external ear	871	29	760	82	3.3	87.3	9.4
Affections of middle ear	34,801	1,238	30,824	2,739	3.5	88.6	7.9
Affections of internal ear	12,295	343	11,121	831	2.8	90.4	6.8
Unclassified	31,205	2,183	25,281	3,741	7.0	81.0	12.0
Unknown	10,115	272	7,544	2,299	2.7	74.6	22.7
Principal assigned causes:							
Scarlet fever	7,424	285	6,647	492	3.9	89.5	6.6
Disease of ear	4,210	222	3,683	305	5.3	87.5	7.2
Measles	2,469	101	2,194	174	4.1	88.9	7.0
Influenza	1,776	45	1,524	207	2.5	85.8	11.7
Catarrh	11,702	304	10,450	948	2.6	89.3	8.1
Colds	3,074	81	2,666	327	2.6	86.7	10.7
Malarial fever and quinine	1,636	67	1,427	142	4.1	87.2	8.7
Meningitis	3,991	83	3,741	167	2.1	93.7	4.2
Brain fever	2,013	59	1,859	95	2.9	92.4	4.7
Typhoid fever	2,055	60	1,839	156	2.9	89.5	7.6
Congenital	14,472	1,710	11,322	1,440	11.8	78.2	10.0
Old age	3,361	38	2,369	954	1.1	70.5	28.4
Military service	3,242	40	2,897	305	1.2	89.4	9.4
Falls and blows	2,243	95	1,933	215	4.2	86.2	9.6
Sickness	2,143	80	1,786	277	3.7	81.4	12.9
Fever	1,436	62	1,257	117	4.3	87.5	8.2
Hereditary	909	57	799	53	6.3	87.9	5.8

(*To be continued.*)

THE FIFTH DANISH MEETING OF TEACHERS OF THE DEAF.

By Anders Hansen, Nyborg, Denmark.

On the 14th and the 15th of October last the fifth biennial meeting of the Danish teachers of the deaf took place in Fredericia. The president of the teachers' association, Mr. A. Hansen, of Nyborg, welcomed the assembly and gave in his introductory address expression of the gratitude of the profession for the new regulation of the teachers' salaries which had been accomplished through a law in the time between the fourth and the fifth meetings.

At this meeting three topics of interest were brought to the consideration of the assembly, and they all got a preliminary solution through resolutions.

Mr. A. V. Holm, of Nyborg, read a paper on the topic: "Is an extension of the missionary work for the deaf in our country desirable?"

The speaker was of the opinion that the present state of things was unsatisfactory and unjust to the majority of the deaf, namely, all who lived away from the capital, where the church for the congregation of the deaf is built and where the specially appointed clergyman, the Rev. Mr. Joergensen, holds religious service twice a Sunday, whilst no regular service is held by him in other parts of the country on Sundays. He was in sympathy with the idea that teachers of the deaf could do a good deal of missionary work among the adult deaf, whom they knew better than, or at least as well as, anybody else.

He meant also that special religious service ought to be provided by the schools annually at the confirmation festivities in the schools, when so many of the former pupils return on a visit. Some more effort ought to be displayed in bringing the adult deaf in contact with the pastor of his or her parish.

The discussion that followed was animated and ended in a resolution, "that the meeting considers the present organization of spiritual care to the adult deaf as inadequate and is of opinion that an extension of it is necessary."

Mr. V. Larsen, of Fredericia, read a paper dealing with what might be done by the authorities for the care of little deaf children before they reach school age. The speaker believed that many little

souls now living in sad and cheerless surroundings not fitted to the needs of such a little child could be assisted and cheered through the good offices of a committee. After a lively discussion a committee was elected to consider what might be done to meet this need.

The paper of Mr. A. Hansen, of Nyborg, concerning the training of teachers of the deaf, is here given in full on the invitation of the editor of the ASSOCIATION REVIEW:

LADIES AND GENTLEMEN: In introducing to your consideration this topic, the training of teachers desiring to enter the work in the school of the deaf, I have thought it advisable to review the methods pursued in the different countries, and to that end by first mentioning the nations to which we are in nearest relationship, both in regard to descent and culture; I begin, consequently, with Norway.

To this assembly of Danish teachers of the deaf it is a well-known fact that the Norwegian government recently has outlined fixed rules for the preparation of young teachers who want to become teachers of the deaf. The training of such teachers is to take place in the public school for the deaf in Christiania and the course is of two years' duration. The conditions of admission are to have passed the examination as elementary teacher or to be provided with a university degree. Let me add to this information that the economical conditions of the Norwegian teachers of the deaf are less satisfactory than with us.

In Sweden there has, since long ago, been in activity a course for the training of the future teachers of the deaf. This course is connected with the public deaf school at Manilla, near Stockholm. The conditions for admission are similar to what they are in Norway.

After one year's theoretical and practical training, the young teacher is nominated as assistant, either in the Manilla institution or in another ministry designated school of the deaf, where he or she has to work in the classes for one year, after which the candidate is admitted to undergo the prescribed test for teachers of the deaf, and when that is passed he or she can get a final appointment in some school.[1] I want also here to state that the remuneration our Swedish colleagues get is slightly smaller than in Denmark.

Finland does not belong to the Scandinavian group in regard to race or language, but as to culture that country is in close union

[1] The appointment of teachers in board schools, public deaf schools, and colleges is of another nature in most countries on the European continent than, for instance, in the United States. It is more binding for the authorities. When a teacher has become finally appointed, as a rule after one or two years' service, he cannot be dismissed except he commit acts of a criminal nature.

with the three Scandinavian countries, and on that account I have chosen to mention it in this connection.

If any one wants to enter our profession in Finland and is in possession of the certificate as elementary teacher or of a university degree, he may get a temporary appointment of two years in one of the public schools of the deaf, during which period he has to prepare himself under the direction of the headmaster to sit for the specially established examination for teachers of the deaf, which is under the control of a commission. During the preparatory period the candidate gets a modest salary in the above-mentioned cases.

The salaries our Finnish colleagues get in the public schools of the deaf—mostly state schools—are some of the best in Europe when the cost of living is taken into consideration.

If we now look southward to Germany we shall find a well-organized system for the training of teachers of the deaf; in Prussia it deserves even the name of an excellent system.

The main center for this training in Prussia is the royal school for the deaf in Berlin. The admission requirements to the training course, generally attended by some 6 to 10 students, are to have passed the second part of the examination for elementary teachers, or to have a university degree supplemented with a prescribed pedagogical test. The authorities provide bursaries for the candidates during the training period. Some of the lectures are given by professors from the Berlin University. Some of the teachers get, however, their professional training in one or another of the public institutions for the deaf, under the leadership of the director of the school. In this case the teacher has also to be trained at least two years before he is admitted to sit for the examination that is presided over by a special commissioner, if held in the provinces; or the candidate can go to Berlin to be tried there in the royal school, together with the other candidates. The written test consists of an extensive treatise on a given topic, to the elaboration of which the candidate may take six months.

In Berlin there is, furthermore, another course to be found, namely, one for teachers desirous of preparing themselves to undertake a headmastership. A period of at least five years after the test for a teacher of the deaf is passed is required of the candidates going in for this second examination. The candidates are tested in many branches of our special pedagogy as well as in French, and optionally in English or Latin.

In the Kingdom of Bavaria there is a training course, at the

Munich institution, of only one year's length. Also the grand duchy of Baden has provided a similar course for teachers of that country. In other of the states within the German Empire, where no special training courses are established, the teachers attend one of the above-mentioned centers.

In Prussia, as well as in some of the other states, there seems to be a commendable relationship between what the school authorities expect or exact of the teachers and the pay they give for it—and it ought to be so all over the world—for the salaries are, generally, well regularized.

In Austria there prevails no conformity of the education of the young teachers of the deaf. Special provision for the training is established both in Vienna and Prague, and in several other places.

The Vienna school requires at least that the young teacher shall have the certificate of the city school teachers' test to be admitted to the preparatory work in the school leading on to the examination of teachers of the deaf, that is presided over by a commission.

The institutions for the deaf in Holland are private, which fact may be accountable for the absence of conformity in the training of the teachers. The Rotterdam institution has one form for the training and the school in Groningen another, which last I find to be an excellent one and deserving special attention.

The certificate of an elementary teacher is sufficient for a man to get appointment in that school as assistant teacher, but to get employment as ordinary teacher he has to submit to a test in articulation and phonetics at the end of the first year's service. If he wants to become promulgated to become a teacher of the first grade, he must, five years later, go in for a second test, including, besides methods, etc., two foreign languages, viz., French and German. If he wants to qualify himself for a headmaster's certificate, he must pass a new examination, after five other years' service, where English, among many other things, is required.

I am sorry to say that, notwithstanding these really praiseworthy efforts of the authorities to raise the standard of qualifications of the teaching staff, they only offer very modest salaries, rather smaller than in the board schools.

After having passed in review the organization of the provision for training of teachers of the deaf in the above-mentioned countries it seems natural to cross over the channel and see how our racial relatives in Great Britain proceed in their endeavor to provide efficient teachers for the education of deaf children.

The most common practice in that country has hitherto been to engage young girls and men as pupil teachers; that means practically the position as an apprentice in the teaching profession, and that system is—and was—in use also in the elementary schools. That is a form of training that is entirely unknown with us on the continent; it contains some advantages as well as disadvantages. The training period extends over four years. To insure that the pupil teacher does not neglect to acquire the necessary stock of common learning and culture, a course of studies is outlined and controlled through annual tests. A good many of the teachers of the deaf in the British Islands are also certificated as elementary teachers. Besides these requirements as to general knowledge there has recently been introduced a special examination for teachers of the deaf, that after next year is entirely placed in the hands of the N. A. T. D. (the National Teachers' Association).

By the kind permission of the examining board of that body I had last summer the privilege of attending parts of the examination of 24 candidates who presented themselves to that ordeal in Edinburgh. And the papers they had to write on the several topics were, I must say, rather difficult. Some of the candidates had been many years in the harness as teachers; it is therefore my conviction that this examination is of high importance to the British schools of the deaf, and the tendency under the auspices of the N. A. T. D. is to increase the requirements; and in the future attention will also be directed toward the pre-qualifications of common culture the candidates are equipped with, so as to render it difficult for incapable people to enter the ranks of the teachers of the deaf.

It is a pity that the salaries our British brethren get are inadequate as a whole, perhaps London excepted.

It is perhaps difficult exactly to state how the training of teachers of the deaf is dealt with in the United States all over the Union. A large percentage of the teachers have been trained in the two institutions to which special training courses are connected, namely, in Washington, in Gallaudet College, and in Northampton, in Miss Yale's school, where the course recently has been enlarged through the generosity of one of the most prominent benefactors of the cause of the deaf in America and in the whole world, Dr. Graham Bell; the latter training class can now accommodate ten students, whilst there are only admitted four annually in the school in Washington, where the course is of one year's duration. The students are usually graduates of a college, or in possession of a similar standard of learning.

I conceive that that great and wealthy Union is the country where there is place for a special college for the training and education of teachers of the deaf whose only task should be limited to that, and it would thus set an example for other great nations to follow. The salaries vary considerably, but are as a whole small in comparison with what a business man can earn. It is therefore difficult to induce capable men to stay in the profession. A raising of the standard of qualifications of the teachers needs, in my humble opinion, to be accompanied by better pay for the teachers on that continent.

Many of the prominent teachers of the deaf in France have received their training in the National Institution in Paris. The claim as to admission of newcomers is to be certificated teachers, or to have a university degree. The young teachers have three consecutive years in which to prove their aptitude for the calling through tests before a commission; they are tried in methods, phonetics, articulation, etc., etc., but not in foreign languages.

At the present date there are in France altogether 25 schools where the staffs are composed of lay-teachers. It is required of them to have a certificate as elementary teacher and to pass a supplementary test as teacher of the deaf. This test is divided into two degrees, the first of which can be obtained after two years' service; the second after four years in a school for the deaf.

In the Milan institution in Italy there is a course of training of the teachers for the deaf school which can accommodate six students; in theory they are supposed to be certificated as elementary teachers, but the practice sometimes differs. The salaries are quite inadequate in almost all instances.

Even in Russia some special training of the teachers is to be found in some of the institutions. The course connected with the school in St. Petersburg lasts two years, and as admission is claimed the applicant must have a certificate as elementary or private teacher. In Riga and in Warsaw the course is ended in one year, whilst the schools of other regions of the Baltic provinces, where the German language is in use, get their training in one of the schools in Germany which I already have mentioned.

Returning to our own country after this imaginary tour of inspection of other countries, where activities, under one form or another, are established to train young teachers of the deaf, it is rather surprising and trying to state that nothing of the kind yet is to be found with us, who, in many other respects, have the

privilege of belonging to the nations that have done most for the education of the deaf child.

Formerly, when the salaries and the rules for appointment and pension were less satisfactory than now, it was understandable that the authorities had to be not too excessive in their requirements of supplementary accomplishments, but now, after these matters have been corrected by the government, it is rather strange that the ministry, in return, has not attempted to raise the standard of ability through the introduction of a professional test.

I do not think that any of my colleagues are in doubt that the training arrangements I have mentioned, to a higher or lower degree, have increased the efficiency of the teachers' efforts. But if we do not dare to contradict that statement I want to ask, is it then creditable to us, the teachers, is it right and just of us, to keep silent and inactive as long as a similar reform has not been introduced in our school system? For, surely, we all agree upon the general rule that a highly trained teacher is likely to create finer results than one poorly trained. If we can agree so far, I also hope we may agree in the natural conclusion, that it is necessary to start a special training for the teachers of the deaf in our own country. The shortness of the period of education, through the law making it compulsory during eight consecutive years, does not permit that instruction should suffer in point of efficiency on account of lack of this special training, for it would be unjust to the children under our care.

Without entering upon dangerous particulars as to the question, I consider it advisable for this discussion to call your attention to two points of cardinal interest that must be dealt with: First, what pre-qualification shall be required of the candidate applying for a preliminary appointment in a royal deaf school; and, second, what professional training has he or she to have before the final appointment as royal employee two years later?

Dr. Forchhammer, of Nyborg, seconded and strongly advocated the wishes set forth by Mr. Hansen. He urged that it was a question of highest importance and touching the very life nerve of the Danish schools for the deaf to arrive at a satisfactory solution of this matter.

After several other members had explained their views, the resolution was passed unanimously, "that the fifth Danish meeting of teachers of the deaf is of opinion that the certificate of an elementary teacher, supplied with the necessary command of one or more foreign languages for the study of the professional literature, ought to be required of applicants to vacant posts as teachers; and that a special examination ought to be passed after two years' service before a final appointment in the school of the deaf can be obtained."

MIRROR PRACTICE AS AN AID TO LIP-READING.

MILDRED KENNEDY, BOSTON, MASS.

As the eye in watching a biograph picture receives and transfers to the brain the impression of the moving objects and colors depicted, so in lip-reading the eye catches and transfers the rapidly moving pictures of speech as they pass in succession over the face of the speaker. A well-trained eye and brain working in harmony can decipher the actual meaning of these moving pictures of speech, even though the ear is unable to catch any of the sound vibrations which follow.

It is with motion alone that a skilled lip-reader has to deal, for the moments of rest during the progress of speech are so slight as to be almost imperceptible.

In the early analysis of lip-reading study it is necessary, for obvious reasons, for the teacher to speak slowly. This gives rise to preceptible breaks and divisions in the utterance of words and syllables, which are of so marked and prolonged duration as to be correctly termed positions. These are only perceptible in the early stages of the study when slow, deliberate enunciation is essential, a necessary stepping-stone over which the student must pass in order to achieve a rapid and almost unconscious interpretation of the pictures produced in normally fluent speech. Therefore the earlier a pupil is able to free his mind from the thought that a study of *positions* is an important factor and in its place substitute that of *motions,* the more rapid will be his grasp of the principles and the more speedy his ability to interpret intelligently that which he sees.

It is true that no two persons make identically the same motions in pronouncing any given sentence. On the other hand, all persons must make approximately the same movement in repeating the same words. A skilled lip-reader understands what is said without any conscious analysis of the movements, and it would doubtless take some few minutes for such an one to analyze his mental calculations and formulate them into an intelligent description of the processes through which his mind must pass before he can comprehend the kaleidoscopic pictures passing before his eye. Every skilled reader must have gone through the stage of learning *how* things are said,

even if he has forgotten much of it, for only through understanding how things are said can one be able to understand what is said.

In the art of lip-reading, as in other arts, much depends on practice. The degree of facility one may acquire is in ratio to the amount of practice one will give to it. A great deal depends upon the amount of practice the pupil does out of school, either by himself, that is with a mirror, or with friends. Some maintain that practice with another is always more helpful than mirror-practice. On this point there is a diversity of opinion. Practicing with another, unless under the most favorable conditions, is often very wearing and not always altogether helpful. The ideal way is to practice with a fellow-student who is himself struggling, or has struggled with the difficulties at hand, for lip-reading requires infinite patience. Indeed, patience and perseverance are two qualities which the successful student must possess and cultivate to the utmost.

The demand upon patience is of a twofold nature, for the student must exercise it toward himself as well as, or even more than, toward the teacher or friend with whom he may practice. With the deaf and with those who have studied lip-reading, there is an appreciation, a subtle sympathy for the fellow-student, which one who has not experienced the difficulties often fails to grasp. "If I only had some one who *understood* how to practice with me!" is a complaint frequently made by the students.

It is so difficult for the pupil to impress upon the minds of his friends that during the practice they must speak *naturally*. They are so anxious to "help," that when he fails, after two or three attempts to read a sentence, they feel they must make it more distinct, and their efforts though prompted by the kindest intentions are too often discouraging and disheartening to the student; for it is only the trained teacher who understands how to help by speaking unnaturally and, if necessary, by exaggerating. Other persons in so doing exaggerate the movements to such a degree as to render them utterly distorted and unrecognizable. If those who practice with the deaf could remember that in speaking to a lip-reader the same principles are applicable as in speaking to a foreigner whose ear has not become accustomed to the sounds of the language when spoken rapidly, but who can easily follow the meaning when the words are spoken in a slow and gentle manner, the progress of the student would be more speedy and sure. The foreigner is training his ear; the lip-reader his eye. The requirements on the part of the speaker are much the same in either case.

There is even a greater demand upon the pupil's patience in the home practice than at the school, for the trained teacher understands how to guide the student over or around the difficulties in such a way as to dissipate discouragement and nerve-racking irritation. The majority of persons, unless natural-born teachers, or those having had a teacher's training, do not understand this art, and its absence when needed is often the cause of much unnecessary nerve strain and depression. The probabilities, in the case of a beginner practicing with another, are that the simplest sentence will have to be repeated many times before he grasps its meaning. For a while the study will progress satisfactorily and helpfully, but after the simple sentences have been repeated over and over again, and the student has failed over and over again, on some one or more words which hold for him subtle difficulties, there will come into the manner and bearing of the one with whom he is practicing unmistakable signs of impatience and annoyance. This change will at once affect the lip-reader and he will become more and more confused and bewildered as the speaker manifests more and more signs of impatience. At the end of half an hour's practice in this way, the student feels irritated and the effect upon his nerves is unfortunate to say the least.

This is the very point in which mirror-practice can be of great benefit if pursued intelligently and conscientiously. If the student, before attempting to practice the lesson with another, will devotee a few minutes to concentrated mirror-practice, studying the motions of his own lips as he repeats the sentences over and over, slowly enough at first to follow every movement intelligently, then rapidly and more rapidly till he repeats them as in normal speech, training his eye by memorizing, not the sentences, but the *movements,* he will find the practice with his friend a different matter. After practicing in this way he should ask some one to repeat these sentences to him, at first in their usual order, then skipping about, changing the sentences and words, combining half of one sentence with half of another, placing words and phrases in all possible orders and combinations as long as the sentences make intelligent statements. At the end of this practice the student will be surprised to see how encouraged he feels, and there will have been little or no irritation shown or felt in either one or the other.

Some may agree that with such practice the student will learn the sentences by heart and therefore it can be of little help to him. Even if he knows them by heart from beginning to end, it can be of

little assistance to him in this new study, for the object now is to learn them by *eye*—and when he has learned this lesson it is time to pass on to something else. When the sentences are repeated out of their usual order and the student recognizes them the first time they are spoken, he may feel that he has learned this lesson by eye, and that the time has come to attempt something more difficult. Another argument against mirror-practice is that it does not help because "one knows what one is saying." Persons who use this argument fail to comprehend the real object of mirror-practice. The very fact that one *does* know what one is saying is a help, for the object in this study is to see *how* one says what one says, that is, to follow the movements understandingly and to associate the movements with the words that they illustrate, fixing the picture so clearly in the memory that seeing the movement one can instantly recognize the words which produce the movements and understand the meaning of the sentence.

A word descriptive of how to practice may be of interest and helpful to persons to whom this is a new field of study. The mirror must be large enough to see the whole expression of the face and held on a level with the face—that is, so that the reflection is in the same relative position to your eye that a person's face would be when talking to you. An easy way to hold the mirror in a correct position is to rest the elbow on the table, holding the mirror up and talking into it with head erect, in a natural, conversational attitude. Never lay the mirror on the table, or hold it in your lap so that it is necessary to lean over it. If practicing with a large mirror sit or stand before it in such a position that there will be no dark shadow on your face, but with the light strong enough to see distinctly the movements of your lips, tongue, jaw, and cheeks.

Concentrate your thoughts on watching these movements while repeating sentences, always slowly enough to follow the movements understandingly, but increasing the speed as you grow familiar with the movements, until at last you can follow them when the words are repeated as rapidly as in ordinary conversation. *Always* keep your thoughts upon the movements, follow them, and strive to impress upon your memory their meaning. This intense concentration is at first very tiring, and therefore short sessions of this practice are advised, that is, five or ten minutes at a time; then rest for a while and return to the study again after a short recess. Practice as frequently as possible during the day, the oftener the better, only be

sure to give your whole mind to it while practicing, following every movement conscientiously and understandingly. If you allow your thoughts to wander, mirror-practice can do you no good.

The best results of course follow systematic practice, and the writer would advise business men and women, whose days are so filled with other duties that they find it difficult to "find time for lip-reading practice," to make a point of setting aside ten minutes each day to be devoted to mirror-practice. If they do this conscientiously, in a few weeks they will be convinced of its value.

The writer is herself a lip-reader and a teacher of lip-reading, and the methods set forth in this article are not mere speculative theories, but principles that have been tested; and when tried conscientiously, they seldom fail to help the student.

Such study is not interesting in itself; in fact, it is little more than drudgery. It is for the lip-reader what scales are for the pianist, and as scale-practice leads to greater facility in piano-playing, so mirror-practice leads to a more speedy and accurate command of the art of lip-reading.

SOME SUGGESTIONS ABOUT LIP-READING.

MARY DAVIS JONES, GRAND RAPIDS, MICH.

There are several phases of the study of lip-reading that the teachers and the literature of the subject have neglected or failed to emphasize. We all know that English at best is a difficult language for deaf children to learn to speak and understand, with its ridiculous spelling—one vowel with different pronunciations, and letters that are never pronounced at all—without making it still harder by a slovenly enunciation. The same careless speech that is so difficult for the deaf to follow by the eye, is also difficult for the hard-of-hearing and those who depend on a trumpet to follow by ear. And even for those with good ears, indistinct enunciation is an unnecessary strain on the nerves. I have in mind a certain High School teacher, of whom her pupils used to complain that they had difficulty in following her class work. Later, a deaf sister of hers took up the study of lip-reading, and to help her and to be able to converse with her, this teacher drilled herself to speak more slowly and more distinctly. Now, pupils say they find her one of the easiest teachers to understand, although she speaks in a lower tone than formerly.

Every one who has attempted to learn lip-reading daily meets persons whom it seems hopeless to attempt to understand: their teeth are held close together, the jaws rigid, the lips scarcely moving, with little or no expression or dramatic motion of the hands. By associating with such a speaker, the lip-reader comes in time to be able to make out something, but at the best it is discouraging and unsatisfactory. I have sometimes tried to write down just what sounds I actually see. This sentence was spoken to me: "Put it on top of the stove." I understood what was said, but when I analyzed it, this was all I actually saw: "P (or b or m).....p (or b or m)...f (or v)...ŏv (or f)." All the rest might have been ŭ for anything I could see. A certain person by the name of Knight was being talked about. I watched the different speakers to see what motions they showed in speaking the name. One person made just one motion, a slight pulling back of the corners of the mouth for the last part of the dipthong ī. Another made the double motion for the dipthong, but no one showed either the n or t.

If our public schools for hearing children gave some systematic drill in slower and more scholarly enunciation, it would tell, not only on the nerves and throats of the speakers, and on the quality of the American voices, and on the nerves of the hearing, but it would reduce immensely the burdens of the deaf and hard-of-hearing.

I wish there might be some way of overcoming the prejudice so many people have to conversing with those who read the lips. Perhaps my experience has been unusual—I seem to come in contact with so many persons who can't speak naturally after finding I am watching their mouths. I went to a dentist to whom I was a stranger, although my sister was his patient. I didn't tell him I was deaf; he wasn't easy to read—but I "made out"; and everything went well for several visits. Then there came a day when I couldn't understand what he said. He evidently was embarassed, and after repeating a question three times I told him he would have to write it. Then he wrote: "The reason you don't understand me so well today is because your sister told me you depended on lip-reading, and consequently I can't speak naturally." I felt grateful to him for recognizing that the fault was partly his—most people don't!

Another time I went to a dressmaker whom I'd never employed before. She had a good mouth and spoke slowly and distinctly. It was in the early days of my lip-reading and I was delighted to find how easily I understood her—it was like getting hold of good, clear print after struggling with blind script. I didn't tell her I was deaf and she didn't discover it till one day she was on the floor behind me. Presently she rose, came around in front, and said with some spirit: "Why don't you answer my question?" I had to own up, "because I didn't see it." From that time till the dress was done she never spoke to me if she could avoid it. She made motions, or wrote, or, if she did speak, it was with such contortions and working of the mouth that it was quite impossible to tell what she said.

One day a woman called whom I had not seen for years. She was not remarkably easy, but her mouth was large and she opened it well and spoke with some deliberation. Apparently, I got on all right—I didn't get every word (does any lip-reader?), but enough to answer her questions and get the answers to mine. After half an hour my sister came into the room and I excused myself for a few minutes. When I came back the caller said at once: "Now, I want you to get your trumpet, for I have some important things to say to you and I have no feeling of assurance that you're understanding unless you really hear." My first impulse was to refuse, and tell her

to talk to me as she would to others, or not at all. But I could not do this without being rude, she being so insistent. So, reluctantly, I brought out the conversational tube. She immediately opened a tirade against lip-reading—the uselessness and impracticability of it. She'd happened to know a number of deaf people, mostly strong opponents of the oral method, and was primed with so many illustrations and facts that I felt rather swamped. She said the normal way for the deaf to converse was by means of the hands, and when my trumpet would no longer work I should learn the manual alphabet. I pleaded that none of my friends knew it and it would be asking a good deal of them to learn. She said my friends would all be glad to learn. I argued that if I had a friend who wasn't willing to hold up her head and turn her face towards the light and speak a trifle more slowly and distinctly for my benefit, I didn't believe I could count on her to learn an entirely new way of talking. When she left I was in a rather crestfallen frame of mind. I asked my sister if she had heard what H. said of lip-reading. "Yes, I heard that—but you didn't hear what she said when you left the room. She wanted to know what in the world you'd done to get back your hearing!"

When I first returned from studying lip-reading with Mr. Mears in Boston, I was anxious to find every possible way for practice. There was a club of amateur elocutionists, who met in the daytime in a well-lighted room. The program was announced in advance, so that I could read the thing to be given in advance, and I thought to attend their meetings as an honorary member would be good practice. I called on a member of the club to see if she would propose my name. I found her very easy to understand, and had such a pleasant call that I stayed an hour. When I rose to go she said: "Why do you bother to learn lip-reading? Do you want to teach it?" "I may like to teach it some day, but first I want to be able to do it for my own use." "But you hear well enough for conversational purposes." "But I just don't! I haven't heard the sound of your voice at all." "Well! I've always said that thing couldn't be done, but it looks as if you would be able to do it!" That exclamation came in her first surprise, and was spoken naturally. Then she proceeded to speak in an entirely different manner—working her mouth, separating her words, and being the while so self-conscious and unnatural that I couldn't understand anything she said!

I could give other similar illustrations, all going to show that if lip-reading is to be the success that teachers promise and pupils

hope for, some education is needed besides that of the deaf persons themselves.

I would like to have every teacher of the deaf, both children and adults, organize classes for the friends and families of their pupils. There would be no need for individual instruction. Classes of ten or twelve could be taught as well; and even in a few lessons a clever teacher who understood the difficulties of her pupils could give hints and suggestions that would be of incalculable help. Some help could doubtless be given in printed form, but many people would never see the printed directions, and of those who did few can get as vivid an idea from print as from personal talk. Also, in a class, the questions and discussions would help to throw light on the subject.

The most rudimentary principles of lip-reading should be shown: which sounds are distinct and well-marked and nearly always show; which sounds are only seen sometimes and in very careful enunciation, and which sounds never show at all and must be guessed. This would help the friends of the deaf pupils to make some choice of words in speaking. When two words or sentences have the same meaning, to choose the easier. For instance: "Pull down the shade," or "Lower the curtain." The first a beginner in lip-reading would probably recognize; the second, without some hint by motion of the hand or connection with what went before, would require a very skillful reader to interpret.

Proper names are often difficult taken by themselves, but an explanatory clause might give the deaf person a clue: As, "Mr. Hunt, the postman," "Miss Dean, who called this morning, said," etc. Sometimes one person goes by two different names—the genuine name and a nickname, one of which is easy and the other difficult. As, for instance, Elizabeth is easy, while Lizzie, or Liz, or Lillie are hard. Henrietta is easy to see, while Nettie is difficult. Gertrude is easier than Gertie, and one might give many other illustrations.

At the Colorado School for the Blind and Deaf, where I visited recently, the teacher of the older oral pupils asked me to talk with one of the children. I think the girl who was introduced to me was not born deaf. She appeared to speak easily and readily. I don't know what her voice was like, but I had no trouble in understanding her and she read my lips very well. At first I chose my words carefully, to make it easy for her. Then to give her something harder, I asked: "Do you like it here?" She was puzzled, and I repeated my question; then changed it several times, but kept the hard word "like." I couldn't get it in so that she could either guess it or see it,

and finally had to ask: "Are you happy here?" Then her face lighted up and she said, "O yes, I am very happy here." Another day I visited their afternoon manual training work and found the same girl in the sewing-room, and after talking with her for a moment about her work, I tried the same word "like" again, asking her if she liked the sewing as well as the school-room work in the mornings. But again she failed on it. My experience is that the children in our oral schools depend too much in their lip-reading on what they actually see, and not enough on guessing. Perhaps it is unavoidable—I'm not sure. But at any rate, some help and encouragement can be given them, as well as adult lip-readers, by some judicious choosing of words or arranging the sentence in different form. I doubt if any lip-reader has good enough eyes to get the meaning of this: "Did he eat it?" But change it to: "Did your brother have a soft-boiled egg for breakfast?" and even a beginner could probably get it. No sentence, however hard, but can be made a shade easier by the addition of a modifying clause or adjective, or the substitution of a more showy word for one which makes no visible external motion. Repeating a sentence more than once in the same shape is quite useless.

Does all this seem too much to ask of the family and friends of the deaf lip-reader? I am making the suggestion as much for their benefit as for the deaf persons themselves. Surely it would be no more difficult than to learn to talk with the hands. I know every one who meets and talks with a deaf person cannot have a special education for it—nor is it necessary. But if, for the children in our oral schools and adult beginners in the study of lip-reading, things could be made a shade easier, there would be fewer failures and a different public sentiment in regard to the whole subject.

Lip-reading is not a material thing to be bought at the bargain-counter; nor is it a branch of knowledge to be acquired by shutting one's self up in the study and burning the midnight oil. So far as it is something to be learned, it must be learned with the coöperation of some one else. What can be accomplished with the help of only a mirror is very slight; some teachers claim nothing can be done in that way. Help he must have, and lots of it; and not only willing help, but intelligent help.

The advocates of the oral method (and by this I mean lip-reading for the hard-of-hearing as well as speech for those born deaf) claim that it restores the deaf to the society of the hearing. Sometimes it does, but never unless the hearing friends are willing to take

their share of the burden of deafness. I fancy for most of the adult deaf the hardest thing they have to bear is that their deafness is not only an affliction, but an infliction also.

Helping the blind is simple and easy, and the poetry and pathos of blindness appeals to every one. Helping the deaf is difficult, and there is no poetry or pathos about deafness to make it easier. In its natural raw state, without the help of education or philanthropy, deafness is a nerve-racking series of humiliations and blunders: nerve-racking not only for the deaf person but for every one he comes in contact with. How to reduce this to its lowest terms is the problem. In no family circle are the hearing members glad or willing that the deaf member should be thrust aside or thrust himself aside. Always, surely, they would gladly have him take his place in their social life, if they only knew how to help him do it.

Lip-reading at the best cannot put the deaf on an equal footing with the hearing. It is only a make-shift, but most things in this world are make-shifts. The ideal of lip-reading, the thing it might be, is the best help yet devised for mitigating both the affliction and the infliction of deafness. But to attain this ideal something more than the education of the deaf is necessary—the hearing, too, have something to learn.

One point more: Lip-reading is not only something for the deaf and the hearing to learn. For the deaf, I had almost said "it is a state of mind," success in it is so dependent upon the mental condition. A spirit of optimism and self-confidence and an alert brain are absolutely necessary, and these never go hand-in-hand with a sense of discouragement and failure. Every time a beginner in lip-reading understands what is said he gains confidence, and next time it goes a bit easier. Every time resort must be had to finger-spelling, or writing, or shouting, or the trumpet, his courage and ability for the next trial are a little less.

A FEW THOUGHTS CONCERNING EUGENICS.

ALEXANDER GRAHAM BELL, WASHINGTON, D. C.

[The following paper is an address by Dr. Bell to the American Breeders' Association at the recent convention of the Association in Washington, January, 1908. This Association was formed several years ago to encourage those persons of the United States working to improve our plants and animals. The President of the Association is Hon. James Wilson, Secretary of Agriculture, and the Secretary, Hon. Willett M. Hayes, Assistant Secretary of Agriculture. Every person who is interested in the scientific work of the Government and of individuals of the United States to create stronger and more productive varieties of animals or plants is eligible for membership. The Association is doing splendid work in collecting and distributing the results of the many workers along these lines. It was as a member of the Committee on Eugenics, of which Dr. David Starr Jordan, of Leland Stanford University, is Chairman, that Dr. Bell presented this address.—EDITOR.]

The subject you have entrusted to your Committee on Eugenics is of transcendent importance to mankind. It is no less a question than the consideration of whether it is possible to apply the principles of selective breeding to man for the benefit of the human race. If it is true that "the proper study of man is man," no higher or nobler subject of research can be found.

I esteem it an honor to have been selected by you to serve on the committee having this matter in charge, and to be associated with the eminent men who compose the committee, under the leadership of Dr. David Starr Jordan, President of Leland Stanford University. President Jordan, as chairman, has already presented a preliminary report for the committee, which has met with the ready acceptance of all the members.

As the Committee on Eugenics has not yet held a meeting for conference and discussion, it will of course be understood that anything I may say upon the subject today expresses merely my own individual views, for which the committee is in no way responsible.

The improvement of the human race depends largely upon two great factors, heredity and environment; and we deal chiefly with the question of heredity. It is a breeder's problem with which we are mainly concerned and not a question of education or environment.

We have learned to apply the laws of heredity so as to modify and improve our breeds of domestic animals. Can the knowledge and experience so gained be made available to man, so as to enable him to improve the species to which he himself belongs?

Can we formulate practical plans that might lead to the breeding of better men and better women? This is the great question we are called upon to consider.

The problem is one of great difficulty and perplexity, for its solution depends upon the possibility of controlling the production of offspring from human beings. By no process of compulsion can this be done. The controlling power, if it is possible to evoke it in the interests of the race, resides exclusively with the individuals most immediately concerned. This fact, I think, should be recognized as fundamental, so that our processes should be persuasive rather than mandatory.

The great hope lies in the fact that human beings possess intelligence, and a desire that their offspring may be fully up to the average of the race in every particular, if not superior. It is certainly the case that no man desires that his children shall be weak, sickly, defective, or in any way inferior in physical or mental endowments. A condition of sentiment therefore prevails that is eminently favorable to voluntary compliance with plans that appeal to reason and sound judgment. The mere dissemination of information concerning those conditions that result in superior or inferior offspring would of itself tend to promote the production of the superior and to lessen the production of the inferior elements.

Knowledge is what is wanted, and the dissemination of that knowledge among the people. There is a wide field here for your Committee on Eugenics, or for some great national organization or society devoted to the increase and diffusion of knowledge concerning eugenics.

Consanguineous Marriages.

If it should be clearly shown that certain classes of marriages are hurtful to the offspring and others beneficial, the mere dissemination of that knowledge would of itself tend to promote desirable and prevent undesirable unions of the sexes. Would any reasonable person, for instance, think of marrying his first cousin, any more than he would dream of marrying his sister, if he really believed that any harm would result to the offspring? And if you could find one such person could you find two—for it takes two to make a marriage.

The fact that such marriages are contracted in spite of legislative prohibition in several of our states, and in spite of a considerable public feeling against such unions, simply shows that there is a difference of opinion upon the subject.

The only justification for legislative interference lies in the belief that consanguineous marriages are harmful to the offspring. The only justification for marriage under such circumstances lies in the belief that they are not harmful—at least, in particular cases. A question of fact is here involved, not mere opinion. Are they harmful or are they not? Or if they are harmful in some cases and not in others, what are the conditions under which they are harmful? These are questions that might well be considered by your Committee on Eugenics.

The experience of breeders of animals would be especially helpful in this connection. It is extremely difficult to collect statistics upon a large scale regarding consanguineous unions among human beings, but a breeders' association could surely supply statistics concerning animals. We all know that the laws of heredity that apply to animals also apply to man; and statistics of in-breeding would be of great value if they could be so arranged as to throw light upon the effect of consanguineous unions in human beings. I understand that while breeders recognize an element of danger in consanguineous unions, and especially in continuous in-breeding for a number of successive generations, they constantly resort to in-breeding to perpetuate and intensify *desirable* characteristics. In fact, it is usually through in-breeding that thoroughbreds are produced; and it is chiefly through the prepotency of thoroughbreds that races of domestic animals are improved. If there are any conditions under which consanguineous unions would be of benefit to man they should be made known, so as to enable us to understand, certainly, what conditions are beneficial and what harmful, to the end that public opinion may be rightly guided in its treatment of this important subject.

We have statistics which indicate very clearly that consanguineous unions should not be contracted by defective persons, and the results obtained by Dr. E. A. Fay[1] are specially significant in this connection. He shows that there is considerable liability to the production of deaf offspring where a deaf-mute marries a blood relative, even in cases where the original deafness was not congenital.

[1] Marriages of the Deaf in America, by Edward Allen Fay. Published by the Volta Bureau, Washington, D. C., 1898.

The statistics of the twelfth census[1] of the United States show that at least 4.5 per cent of the deaf of the country and 4.5 per cent of the blind are the offspring of consanguineous marriages, but we do not know conclusively whether consanguinity in the parents *produces* the defective condition, or whether it simply *intensifies* a preëxisting tendency in the family.[2] The largest percentages of children of cousin marriages are found among the deaf who have deaf relatives (8.8 per cent), and among the blind who have blind relatives (9.5 per cent); whereas in sporadic cases the percentage falls to little more than 3 per cent—that is, about 3 per cent of the deaf who have no deaf relatives (3.3 per cent) and about 3 per cent of the blind who have no blind relatives (3.2 per cent) are the offspring of cousin marriages. This may mean a great deal or it may mean nothing at all. Should we find, for example, that 3 per cent of the population of the United States are the offspring of consanguineous unions there would be no proof that the consanguinity of the parents had anything to do with the production of the defect in these cases. Statistics showing the proportion of the whole popu-

[1] Special Report on the Blind and Deaf in 1900. U. S. Census publication, Washington, D. C., 1906.

[2] *The Deaf of the United States in 1900 from Census Table XLVII, omitting "not stated" cases relating to consanguinity of parents and Deaf Relatives.*

The deaf.	Numbers.			Percentage.	
	Total.	Parents cousins.	Parents not cousins.	Parents cousins.	Parents not cousins.
Total	77,550	3,911	73,639	5.0	95.0
Deaf relatives (*a* or *b*):					
Deaf relatives	24,723	2,171	22,552	8.8	91.2
No deaf relatives	52,827	1,740	51,087	3.0	96.7

The Blind of the United States in 1900 from Census Table XVIII, omitting "not stated" cases relating to consanguinity of parents and Blind Relatives.

The blind.	Numbers.			Percentage.	
	Total.	Parents cousins.	Parents not cousins.	Parents cousins.	Parents not cousins.
Total	55,307	2,449	52,858	4.4	95.6
Blind relatives (*a*, *b*, or *c*):					
Blind relatives	10,483	993	9,490	9.5	90.5
No blind relatives	44,824	1,456	43,368	3.2	96.8

lation who are the offspring of consanguineous marriages are much needed, and the whole subject, I think, might very properly be investigated through the medium of the United States Census Bureau.

The Importance of the Inferior is Overrated.

In any large aggregate of individuals the vast majority will be of the average type of the race. Some few will be markedly superior and some few inferior.

An increase in the superior element seems to be a more important factor in producing improvement than a decrease in the inferior element. Even were we to go to the extreme length of cutting off entirely the reproduction of the inferior, this would not lead to an increase in the numbers of the superior, but on the contrary to a decrease; for some of the superior are the offspring of inferior parents, just as some of the inferior are the offspring of superior.

In the case of superior, average, and inferior persons all three classes would be reproduced in the offspring, but in different proportions. There would be a larger proportion of superior children among the offspring of the superior than of the average or inferior, and a larger proportion of inferior among the offspring of the inferior. The cutting off of the inferior would simply prevent deterioration by lessening the production of inferior offspring. It would not operate to cause an improvement by an increase of the superior element.

I am much struck by the thought that neither the quantity nor quality of the superior element would be increased by cutting off the inferior element from reproduction, and I begin to suspect that students of eugenics have overrated the importance of legislative interference with the marriages of the inferior.

Celibate Fellowships.

A similar process of reasoning leads to the conclusion that the cutting off of the superior element from reproduction would retard the improvement of the race by lessening the production of superior offspring without injuring the community by increasing the production of the inferior elements.

The establishment of celibate fellowships in some of the oldest of the British universities is a case in point. The annual grants are sufficiently large to support the recipients in comfort, so as to enable them to devote their whole lives to some branch of literature, science, or art undisturbed by the necessity of earning a livelihood. Of course there is great competition to secure such prizes, and the finest

and brightest young men are selected by competitive examinations to receive the fellowships. Thus young men of the most brilliant intellectual attainments are enabled to secure a support for life—*but only on the condition of celibacy.* The moment they marry they lose their fellowships. If there are many of these fellowships, and if the plan has been in operation for any considerable period of time, it might be well for students of eugenics to inquire whether the establishment of celibate fellowships in the past has had anything to do with the scarcity of young men of the highest intellectual caliber that is so much deplored in England today. Whether it has or has not, it would certainly seem more advisable in the interests of the community that such fellowships should be granted upon the condition of marriage rather than celibacy.

Prepotency—the Key to the Problem.

Superior individuals on the whole have a large proportion of superior offspring than the average of the race. Of course in cases where both parents were superior this prepotency is increased. It would be still further increased if all the four grandparents were superior, and if three or four generations of ancestors were all individually superior a thoroughbred would be produced. We are all familiar with the prepotency of the thoroughbred among animals. Indeed, as I have said before, it is mainly through the use of thoroughbreds that we improve our stocks of domestic animals. In the case of men and women who are thoroughbred in respect to the points of superiority, it is obvious that their descendants, spreading out among the population and marrying into average or inferior families, would prove prepotent over their partners in marriage in affecting the offspring, thus leading to an increase in the proportion of superior offspring produced from the average or inferior with whom they have mated. Thus not only would the proportion of superior offspring, produced by the community as a whole be increased, but the level of superiority in the superior class would also be raised. There would thus be a general advance in the possession of desirable qualities all along the line from the lowest to the highest. Is not this what we mean by improvement of the species?

Legislative Restrictions upon Marriage Unwise.

This result, I am inclined to believe, would follow from the simple process of promoting the marriage of the superior with the

superior without resort to legislative restrictions upon marriage to reduce the production of the inferior.

Of course, such restrictions should be considered, but the moment we propose to interfere with the liberty of marriage we tread upon dangerous ground. The institution of marriage not only provides for the production of offspring, but for the production of morality in the community at large. This is a powerful reason why we should not interfere with it any more than can possibly be helped. There are other reasons, however, arising from a consideration of the rights possessed by individuals in a free community.

Among the inalienable rights recognized by the Declaration of Independence are "life, liberty, and the pursuit of happiness." The community has no right to interfere with the liberty of the individual and his pursuit of happiness in marriage unless the interests of the community are demonstrably endangered. The happiness of individuals is often promoted by marriage even in cases where the offspring may not be desirable. The production of undesirable children is, of course, an injury to the community, and there may perhaps be cases where legal checks may be justified; but it should not be lost sight of that there are other checks that are equally if not more efficient that can be brought into play. If the conditions that produce undesirable offspring could be authoritatively stated, prudential restraints are apt to arise in cases where defective offspring are likely to be produced. Where the general intelligence of the individuals concerned is at fault, or their duty to the community is not fully understood or realized, another check comes into play far more efficient than any legal restriction. Public opinion is a great compelling force and few there are who can resist it.

Legal prohibition of marriage should only be resorted to in cases where there could be no manner of doubt that the community would suffer as the result of the marriage. Where doubt exists the community has no right to interfere with this most sacred and personal of all relations; and morality in the community would certainly be more promoted by affording the widest possible liberty of marriage than by restricting it. After all, the interests of the community are affected not so much by the fact of a marriage as by the production of undesirable offspring. The only reason why legislation against marriage should be considered at all lies in the fact that we cannot well regulate against the production of offspring. Unfortunately prohibition of marriage does not necessarily prevent the production of offspring. It is surely

advisable that the children born in a community should have legal fathers and mothers as much as possible. Public opinion, and the desire of all persons to have healthy offspring, would, in my judgment, be a more powerful deterrent to the production of undesirable offspring than a compulsory process of law. Throw wide the gates of marriage, and where children are produced close tight the doors of divorce. Every child is entitled by nature to a father and mother; and no people should produce children who are not prepared to give them parental care for life. Without going to extremes, I would say that the interests of the community demand that we should make marriage easy and divorce difficult.

New Blood.

The problem of improving a race of human beings is a most perplexing one to handle. The process of improvement must be slow where the forces concerned act from within and are not amenable to control from without. Under the best conditions it would require several generations to produce sensible results; but in the United States we have, in the new blood introduced from abroad, an important means of improvement that will act more quickly and that is eminently susceptible to control. All the nations of the world are today contributing elements to our population; and we have now, and now only, the opportunity of studying the process of absorption before it is complete. Why should not Congress provide for an ethnical survey of the people of the United States. We should have definite and reliable information concerning those foreign elements which are beneficial to our people and those which are harmful.

The grand spectacle is presented to our eyes of a new people being gradually evolved in the United States by the mingling together of the different races of the world in varying proportions. It is of the greatest consequence to us that the final result should be the evolution of a higher and nobler type of man in America, and not deterioration of the nation.

To this end the process of evolution should be carefully studied, and then controlled by suitable immigration laws tending to eliminate undesirable ethnical elements, and to stimulate the admission of elements assimilated readily by our population and that tend to raise the standard of manhood here.

THE FEAR OF THE WRITTEN WORD.

J. G. DE VRIES, GRONINGEN, HOLLAND.

The history of the Education of the Deaf is essentially one of *contest.* After a hush of many, many ages, there comes all of a sudden a period of storm and stress. As late as the end of the 17th century the whole of the literature of our branch of tuition might be put upon a shelf of a middle-sized bookcase, whereas nowadays a library's shop could be filled with it, and the press is always going on to provide us with more. The question naturally arises: Are there, then, so many issues that demand solution? Comparatively speaking, setting apart those subjects which belong to science and pedagogics generally, their number is not so great that it satisfactorily accounts for our voluminous literature. In turning over the pages of the books of the 18th century, dealing with the teaching of deaf-mutes, we find nearly the same subjects touched upon or debated that form the staple of the discussion in our books and periodicals at the present time. It would be even possible to construe a method out of the different books of former days, which would be in conformity with the conceptions of the Oral Method as advocated by many of the living teachers.

But though there may be little *variation,* there is *variance* enough. Floods of controversy have been and are being liberated to show the excellence of some method and the unworthiness of another. It would be something wonderful, however, if it were not so. We need only think of the long-winded theological and philosophical disputes which bear the same character as the discussion on the education of the deaf and dumb, in as far as their settlement chiefly depends on reasoning, to understand that an agreement is not so easily brought about. It needs knock-down arguments to induce an opponent to give up his long-cherished opinions and to bring him over to yours, and we know that such clinchers are few and far between. We are not so happy as the students of exact science that we can have recourse to calculation and experiments to prove our point. It is true, we can call in the aid of our experience, and surely experience is a good teacher; it even teaches fools, but the proof of its trustworthiness in methodical matters is not so persuasive as in the well-known proof of the pudding. A teacher often

sticks to his experience, just as he does to his reasoning. He opposes *his* experience to another man's, and if he should belong to that class of men who shut themselves up in their own narrow world, without taking notice of what is elsewhere done, he ends his school life just as he started it. But even for those who take broader views of their avocation, it is not an easy thing to judge of the superiority or inferiority of a certain manner of dealing in our schools by *experience* alone. A teacher can only say that *he,* in such and such circumstances, with such and such pupils, has obtained good results, while *another* teacher, working on the same lines, but in other circumstances and with other pupils, may arrive at quite a different conclusion. There come so many agents in play—in the foremost place the individuality of the teacher—that it is not uncommon to find even among the staff of teachers at the same school largely diverging opinions prevailing about some practices there in use. With how much the more difficulty will those come to an understanding who work according to diametrically opposed methods, as for instance oralists and adherents of the mixed method, if they were to appeal to their experience alone!

With a little variation of Pope's lines, we might ask: *What* shall decide, when doctors disagree? And my answer is: *Reasoning,* after all; but reasoning founded on facts—facts whose evidence is recognized by all who are in a position to witness them. Are there such, as can contribute to settling controversies, having reference to our special branch of instruction? There are, as I hope to show presently, after having strayed off to a point that bears relation with them.

A factor which must be brought into account for solving the question, which method ought to take precedence when any might answer our purpose, is, its usefulness, its practical worth for *life.*

Facts have proved that the old French method, the German method, the Manual, and the Mixed method can develop the mental faculties of the deaf, and all can bring them into the possession of language, and it is flying in the face of evidence (witness the numerous schools in America) to pretend that only the Oral method could bring this about.

It is but hardening the hearts of many, and does not go far towards establishing a settlement, when, without a shade of proof, an oralist, in order to extol the merits of the German method, wants to make people swallow such fiction as the following:

"Thinking in gestures is a way of thinking of the simplest kind.

The perceptions do not rise above the sensual. Reflection, abstraction, and combination are, for the deaf-mute who makes use of gestures as the only means of communication, unknown mental facts. He does not arrive at the formation of general presentations (Allgemeine-Vorstellungen), still less to ideas (Begriffe). If the deaf-mute is allowed to make use of gestures, together with spoken language, the possibility of rising above *that* lowest grade of thinking is not entirely excluded, but he is nevertheless stunted, and it must needs bring on a check in his mental sensitiveness, and finally endangers his moral development." (Organ, February, 1907.)

It does not enter into my plan to dwell at large upon these opinions. I shall only allow myself to ask some questions. Is not the deaf newcomer reflecting, when, in the first few days of his school life, he represents to himself his home surroundings, and all of a sudden breaks out crying? Is not he abstracting, when he designs all dogs by the same gesture, or draws a house, a tree, or a horse on the blackboard? Is not he combining, when from the knowing laugh of one of his playmates he concludes that a trick has been played upon him? These may all be proofs of a simple kind of thinking, I readily admit, but it shows that even with the untrained deaf child the mental operations are virtually the same as with the hearing, and that it is willful exaggeration to say that reflecting, abstracting, and combining are even in germ the outcome of the teaching of the word-language, nay, of the *spoken* word. Which comes first, thought, or its sign? Is it the teacher who produces the act of thinking, or does he only label the products of thought and lend their development a helping hand?

Has not the old French school irrefutably proved that the mind can attach its ideas to visible signs as well as to spoken or visible words? Has not experience taught us that general concepts and the most abstracted ideas can be designated by signs? And are not signs used by many just when they want to bring home a *moral* truth?

I am not blind to the great advantages of the *word* in thinking, and I am too convinced an oralist to be suspected of vindicating the good right of gestures in our schools; what I mean to say is only that we cannot hope, by singing the praises of the Oral method in this way, to be successful in its propagation.

It is but leading the discussion on by-paths when we adduce arguments irrelevant to the main subjects of disagreement, which only serves to offer a welcome occasion of filling page after page with needless refutations.

What we have to point out is the *utility* of the Oral method for our pupils in *daily life*. It is only this method which can try, with a chance of success, to place the deaf on a par with the hearing; it is only to teach them to speak and to read speech from the lips of others, that will, in some way, free them from their isolation. Now that the possibility has been shown that art may restore, to some extent, what nature withheld from our unhappy fellow-men, it would be, in my opinion, a shame to let the arable land lie fallow. It may tax the energies of the teacher to the utmost, and it may require not a little amount of willingness and exertion on the side of the pupil as well, to see fruits crop up, but it must not make us shrink back from giving our art a fair trial. And just because our work can only thrive when we have our whole soul in it, we cannot suffer it to be overgrown by the weeds of gestures. And gestures *are* weeds, when compared to the word-language. They may be the indigenous plants and in themselves be better suited to the soil to be tilled, but where we wish to sow the seed of the exotic plant—the word-language—they must be extirpated.

But then we must not try to prove that we can have our cake and eat it. If we wish to teach speech to the deaf-mutes, we must teach it thoroughly. It requires about two years of patient, painstaking labor—and the best teachers of the school must be called upon to do this honorable work—before we can hope that the pupil has mastered the mechanical difficulties of speech-learning, and for the rest of the school years the watchful ear of the teacher must be continually open to prevent the obtained results from being lost again. While this is being done, other things have to wait. The increase of the stock of language is with our speech-learning beginners a very slow process, and the mental development is in proportion to it. This is certainly a drawback of the Oral method, and we must frankly admit that in this respect it is second to the Manual-Writing method.[1]

But the benefit of *speech* throws these objections into the background, and must decide our choice. A speaking and lip-reading deaf-mute of moderate culture stands nearer to hearing society than

[1] It will be of interest to the author and to his European confreres, to know that this admission is, in America, no longer made by those conversant with the work done in the best Oral schools. In fact, by some, the very contrary is claimed. However, even this may be in accord with the author's contention and go far to support it, from the fact that writing, while not permitted at any stage to precede speech or is to be a substitute for it, is, at all stages of instruction, freely used to supplement it and support it.—EDITOR REVIEW.

the gesticulating, finger-spelling deaf man or woman, even if he or she should have a greater command of written language.

In order to combine the blessing of speech with the advantage of a satisfactory possession of language, Göpfert and Forchhammer have, independently of each other, proposed to make an extensive use of the written word; both would make it the foundation of our instruction, and the former would even apply it from the very beginning.

In Germany these innovations—though they were properly the reëstablishment of old practices—have not been favorably received, and many arguments have been brought forward to show that the help of the written word is hurtful to the proficiency of lip-reading and to the perfection of speech. But as it is my purpose to examine only how far *this* is true, I need not analyze all the objections brought on the carpet against the Writing method *generally*. This much I will say: The objections do not excel in distinctness and clearness. They form a miscellany of grievances against disconnected matters—against the Imitative Method, the Normal Word Method; against the exclusive use of the written word with the help of the hand alphabet; against the precedence of the written word. (Karth: Das Taubstummenbildungswesen im 19 Jahrhundert.)

I am now going to touch upon questions which lead me back to the point where I broke off.

When the German method had displaced the French method, the results of the former were not such as its adherents had anticipated, and it was only natural that the scrutinizing minds of the Germans, on whom the new method was fathered, should be casting about for suitable means that might lead to improvement in the cultivation of speech and speech-reading. It will forever remain Mr. Vatter's merit to have pointed out theoretically and proved practically to what requirements our articulation instruction must come up, if it shall be crowned with success. It is quite impossible, he said, for one teacher to teach the rudiments of speech to a class of 10, nay, even 12, beginners, as it was the custom in most schools in those days. (Has it everywhere changed for the better at the present time?) And even if the classes were reduced to half the number, the space of time allotted to the teacher to go through a course of articulation must be considerably lengthened.

Not a few months, but a whole year, and even more, must be bestowed upon the acquirement of the elements of speech and their combinations, and the whole second year has to coöperate in laying

a solid foundation for the ultimate mastering of speech on the side of the pupils.

Nor did Vatter neglect to impress upon the teachers that the study of phonetics is indispensable if they wish to obtain satisfactory results, and those who have, as myself, a more than thirty years' experience, are sure to have known persons who had the charge of articulation classes and were sorely deficient in phonetical knowledge.

In respect to speech-reading, however, it seems to me that Vatter's advice has not had, on the whole, that beneficent influence as has been the case with his precepts for a successful attainment of speech. When Vatter says that *signing* in accompaniment to the teacher's speaking to the children, or that his *unnatural* way of speaking in order to make the movements of the speech organs visible, are pernicious, both to the acquirement of speech and of speech-reading, I entirely agree with him, but when he tries to convince his colleagues of the fatal consequences of the prevalence of the written word, I take the liberty of differing with him in opinion.

"The excellence of lip-reading is, after all, *only* the result of hourly and daily practice carried on for years. It cannot be imagined that lip-reading should find an aid in *ordinary reading*, and derive *benefit* from it. The mind of the deaf-mute does not contain anything which could connect the image of the written word with *the idea* it represents. . . . When we interfere with the direct *association* of *spoken sounds, mimics* and *action* take a prominent part, and finally the *sign*-language is again installed in its old quarters, and is followed by the *hand-alphabet*." (Vatter.) The italics are mine.

Mr. Van Praagh is wrapped up in the same train of thoughts when writing down the exhortation: "Speak, and speak forever; . . . *do not write much*, and you will find that success in lip-reading will be the result, and—your reward."

I have said above that successful teaching of speech to the primary children depends largely on the way it is done—on the ability and the devotion of the teacher, and on the time spent on it. I can, therefore, not side with Göpfert, who, with the laudable object of providing the pupil with a larger stock of language and thus preventing the use of gestures, proposes to make from the very beginning an extensive use of the written word.

By doing so we should be obliged to lengthen excessively the period of the first articulation. If it takes us about two years when

we are slow to use the blackboard, how long would it last before our pupils could really be said to speak well, if we employed the greater part of our time in securing larger returns in the language? For this must be borne in mind: Only a good beginning makes a good end. If the pupil is allowed to pronounce slovenly, if the teacher does not do his utmost to obtain the greatest possible degree of perfection in articulation, all his labor is well nigh lost, for the pupil's pronunciation will grow more and more unintelligible, and even continual correction afterwards will not remedy it. It is not only *early* and *frequent* speaking we must aim at; it is, first of all, *correct* speaking we must insist upon; speaking and speaking forever, even the continuous application of the Italian method, is not a guarantee for success in speaking.

Putting it short, the gist of my reasoning thus far is: We must consider it our main task during the greater part of the first two years to lay the foundations of speech, on which we can hope to erect a solid building of *spoken* language, which does not stand in need of repair at every word or sentence, but only wants the care of the overseer to remain in the state in which it was. And as long as the building is under construction, the *written* word must only be used as the cement that gives the spoken word a better hold, but must never be allowed to supplant it.

When, however, the children are thoroughly grounded in articulation, the written word is mostly a help, and seldom a hindrance. And a *help* we necessarily want. We cannot do with speech and speech-reading alone; the *written* word must needs enter into the alliance, and also illustrates here the truth of the saying that every perfect thing is threefold.

Nor is there any school for the deaf where the pupils do not write or read; it is only with an eye to *lip-reading* that with many there exists fear of the written character, whereas some oralists also pretend that much writing tends to make the deaf-mutes think in the written word, and thus *impedes good speaking*.

Let us now consider these objections more closely. It has been since the time of Graser a truism with many, that as the speaking mouth makes as many different movements as there are articulated tones caught by the ear, these movements must give the mouth, nay, the whole face, a particular form, which must be clearly perceptible by those who look attentively at the mouth of the speaking person.

If this supposition were true, speech-reading would be as sure a means of communication as writing, and the latter could be dis-

pensed with, or at least retreat to the background. But experience can teach us better. Yes, we can make every sound visible, if we do so with a will, but that no one does so in ordinary conversation is without doubt. It puzzles me how Dr. Gutzmann, in his book, Lectures on Disturbances in Language, still clings to the belief in a visible mouth-alphabet, and even exemplifies it by an enumeration of the various visible characteristics of the spoken sounds. Dr. Gutzmann has simply described *his* way of pronouncing the sounds, when looking in a glass, and the wish to detect distinctions has been the father of the thought. Not *half* of the existing sounds in the languages with which I am familiar are visible to the spectator, when these sounds are uttered *naturally, i. e.*, as they occur in the conversation of those who pay no particular attention to their manner of articulating. There is, indeed, at present a general consensus of opinion about this fact, and I should be going to *prêcher des convertis* if I, before the readers of this REVIEW, should give circumstantial proofs. Also Mr. Vatter admits it, of course; but how this admission tallies with his precept of being slow in the use of the blackboard, is not so easily seen. We have to solve this problem:

A teacher, sitting before his class and speaking to his pupil, wishes to introduce a new word, say "peg," entering in a sentence like this: "My coat hangs on a peg." He cannot have recourse, as in the first year, to letting each pupil feel the vibrations at his throat; this would take up too much time, and besides be of little help for what he aims at—having the pupil distinguish, by the *eye*, what he says. What can he do to make himself understood? He might make use of convential signs for *p* and *g*, if he had already done so before; but this would have been a bad beginning, and not answer the purpose. He might, as another expedient, articulate the two sounds so distinctly and open the mouth so widely that the word became visible. But it requires little reflection to see that in this way the pupil is trained in speech-reading for the sake of school, and not of life. If the teacher avoids these artificial indications, and speaks *slowly* but *naturally*, the pupil is at a loss what to make of the new word. He might read beg, big, peck, pick, beck, and many more, just as well as peg, and it is of no avail whether the teacher repeats it a dozen times, as Mr. Vatter would like to have it done; if he goes on speaking in the ordinary way, the pupil will never, but by chance, hit upon the right word.

What other means are there left but *to spell it* on the fingers, or *to write* it on the blackboard? The former, though not at all so dan-

gerous as some people want to represent it, and at all events to be preferred to making gestures, has the drawback that it tempts the teacher to employ it also where the pupil, by *combining,* could arrive at reading words. Though this drawback is not entirely excluded by making use of *writing,* still the chance that it is not so often unnecessarily done is greater, since the teacher cannot have so *easily* recourse to it. In teaching, a groove is always fatal; just as there are teachers who are in the habit of repeating every sentence two or three times before they let their pupils say it, there may be teachers who, without necessity, are quick to write.

On the strength of these observations, I do not jump to a conclusion, I think, when I venture to say that Mr. Vatter and those who think likewise in this matter, mistake the way that leads to perfection; constant and exclusive speech-reading *alone* does not produce expert speech-reading.

Reading from the lips is, for the deaf, reading what is *written* with the lips, and how can we want them to read a word or words that are partly effaced and have never been seen before?

Dr. Bell is quite right when he says: "Mechanical lip-reading is only a small part of speech-reading. By far the greater portion of the process is intelligent deduction founded on previous knowledge of what the gibberish seen by the eye must be."

Success in speech-reading is dependent on an extensive and intimate knowledge of language. Speech-reading must not be first of all a *means,* but the *outcome* of our teaching; it must be daily and frequently practiced for sharpening the sight and accustom the pupils to this singular way of writing, but for imparting *new* forms of language, conveying *new* ideas, it requires the support of the written word.

An uncompromising testimony which corroborates what I have stated above is given by our best lip-readers. Who are they? Not the congenitally deaf, as a rule, but those who, provided they don't suffer from an abnormal eyesight, were already in the possession of language when they entered school. In a couple of years they become readier speech-readers than their less fortunate school-fellows in eight years.

With these facts before us, Mr. Vatter's statement "that it cannot be imagined that lip-reading will find an aid in ordinary reading and derive benefit from it," speaks for an incomprehensible *naïveté,* not to say for an unexplainable disregard of facts.

Mr. Vatter's assertion that the mind of the deaf-mute does not

contain anything which could connect the image of the written word with the idea it represents, is the reappearance of the old philosophic opinion that one could not think without speaking, internally at least.

Does the mathematician think in words, when he is absorbed in the solution of an abstruse problem, or the chess-player when he meditates on putting his partner's king in checkmate, or the commander-in-chief when he surveys the positions of the enemy?

It would be wasting my ink if I, for the sober minds of my American readers, should try to refute this exploded notion with many words. I have already above shown that the deaf-mute, even before he frequents school, can reflect, abstract, and combine, and that thought can attach itself to several forms of language. But not only is the *written* word considered, in some quarters, as the enemy of good *speech-reading;* it is also made the scapegoat of bad *speaking.*

If the adherents of the so-called pure Oral method would act consistently, they should banish from their schools all blackboards and all books; for it is halting between two opinions to pretend, on one side, that when a start is made with the written word, speech-reading would not benefit from it, and speaking would deteriorate, and to devote, on the other side, so many hours to reading and writing.

The Italians have indeed drawn this inference, and put it, at least in the outset, into practice; that they have not gone the whole length of their reasoning is less logical, but fortunate for their pupils, I dare say.[1]

How do the champions of the pure Oral method make out that the prevalence, or even the interference of the written word, impairs a clear enunciation?

Mr. Werner, Director of the School for the Deaf in Stade, published last year a brochure, A Psychological Foundation of the German Method, in which he lays down two theses that form the basis of his further argumentation:

1. Hearing people think in sound-images, *i. e.,* when they think (in words, of course; but this qualification has been omitted by the author), they hear the words—in which the thoughts are couched—*internally.*

2. Deaf-mutes, when they speak, think in *articulative sensations* (by which name he denotes all those movements of which they become conscious, when articulating).

[1] I was told, the other day, that the Italian method had been done away with in Italy.

He does not deem it necessary to substantiate these theses, but simply appeals to experience, which compels us, he says, to accept them as matters of fact.

But now it happens so that these theses owe their origin to the study of *paper* psychology, on whose authority they are promoted to the rank of truths.

Experimental psychology has proved that hearing persons think in different ways—that is to say, they combine their thoughts when thinking silently in words—with one of the forms in which the word may be imbedded in the cells of the brain.

Many think, it is true, in acoustic images; but there are also those who think in the visual form of the word; others who think in the motorical form (spoken or written), in which it represents itself to consciousness; and again others who think indifferently in any of the four at different times. (Dodge: Motorische Wortvorstellungen; Stricker: Studien über die Sprachvorstellungen; Charcot: De nouvelles Leçons sur les maladies nerveuses; Ribot: Psychologie de l'attention; Ballet: Le language intérieur.)

I have treated this question more extensively elsewhere (Blätter für Taubstummen, Febr., 1907); suffice it here to say that with a congenital deaf-mute the possibility of combining their thoughts with sound-images is, of course, excluded, but that there is no saying with which of the three other word-forms the deaf-mutes will connect the contents of their thought. It is not in our power to make our pupils think in a dictated way, say in motorical images; even if the *written* form of the words were rigorously excluded from our means of communication with our pupils, there would be always some to whom the *optical* image of the speaking mouth would emerge in their consciousness rather than the *motorical* sensations of their speaking apparatus, and from this point of view the Italian method, though applied in all classes, would not be a guarantee for making them think in *articulative* sensations.

But good articulation is not first of all dependent on the mode of thinking; it is, as I stated before, chiefly the result of the teacher's work during the first years and his watching over it during the following school years, and though there will always remain a few in any school who for some reason or other are unfit to learn to speak well, I concur with what William Thornton wrote as early as 1793: "The imperfect manner in which the deaf-mute speaks depends not upon the pupil, if *of common capacity,* but upon the teacher."

To make the *written* word responsible for the bad speaking of the pupils testifies a one-sided view of what speech-reading to the deaf-mute essentially is. If we bear in mind that to make him read speech from our lips is materially the same as to make him read what is *written* with our lips (perception of *sound* is out of the question), how can it then be maintained that the use of the *mouth-alphabet* will secure in itself good speaking, whereas the infinitely more legible *letter-alphabet* should be a drawback to good enunciation?

And it is likewise a mistaken notion to believe that with the use of the *written* word *mimics* and *action* would take a prominent place, and that even the *sign-language* would be installed in its old quarters. Neither the *spoken* nor the *written* word tells us anything about its *meaning;* if the *written* word requires elucidation to be understood, the *spoken* word for the same idea requires it no less, and, besides, it must not be forgotten that Mr. Forchhammer, the well-known champion of the so-called Writing method, only gives the *written* word the precedence, but has it immediately afterwards translated into the *spoken* word. And far from being favorable to the installation of signs, the more extensive use of the written word will, on the contrary, repel them, because with the more rapid increase of language the deaf-mute will have a means of uttering his thoughts which makes signs for him superfluous.

"That the *spoken* word can associate itself with the expression of the face and with the spontaneous movements of the whole body" is true, and will not be denied by any one, nor does it apply to the advantages of the pure Oral method solely, but "that the *spoken* word always remains immaterial and incorporeal, and therefore is the most fitting expression of abstract and spiritual ideas" is philosophic nonsense.

One thing must still be said: It is a great pity that *spelling* is, in many languages—and English stands uppermost in this respect—a very inaccurate representation of the spoken words, and it is therefore indispensable that the example of Mr. Forchhammer in introducing a *phonetic* spelling into our schools should be followed everywhere.

And herewith I have said my say. I hope I have succeeded in my endeavors to put in a good word for the larger use of the *written* word in our schools, not for supplanting the spoken word—far from it—but for being in its service a helpful friend.

CONTEMPORARY THOUGHT.

HELEN KELLER ON "SENSE AND SENSIBILITY."

The world is becoming familiar with Helen Keller as a person who has, in spite of her handicaps, attained fully to the mental plane and facility of her normally sensed fellows, but it has scarcely yet known that in some parts of her nature and life she has gone far beyond all heretofore explored pathways and is able to tell us of sensations and experiences the like of which until now neither memory nor book holds record. One can almost believe that each of our senses is the center of two spheres, one the inner, to the limit of which we all in our sensations attain, the other, the outer, attained to through the necessities of such rare souls as Helen Keller, and the genius of the greater musicians and of other artists specially endowed in one or another of the sensibilities. But more than her supersensibilities, Helen Keller has that intellectuality, power of analysis, intuition, or what you will, that enables her not only to see the things that she sees or perceives, but to see that *we* do not see them, and *why* we do not—and can not—see them. And it is of these things that she tells us so delightfully in her "Sense and Sensibility," in the February and March numbers of the Century magazine, of which we can give space only to the first few paragraphs. The introduction by the editor of the Century is reproduced as giving his estimate of the paper and of its author's powers:

"In the maturity of her intellectual powers, Miss Helen Keller has concluded to give to her friends and the world the most intimate and detailed account she has yet prepared of her experiences in an existence where, deprived of the senses of sight and hearing, she is restricted to the three other senses of touch, taste, and smell. Owing to Miss Keller's remarkable skill and literary expression, this account (comprised in two articles in prose, to be followed by her first published poem) will be found to be unique in literature—a 'human document' of the highest interest and importance."—EDITOR OF THE CENTURY.

Some months ago, in a newspaper which announced the publication of the "Matilda Ziegler Magazine for the Blind," appeared the following paragraph:

"Many poems and stories must be omitted because they deal with

sight. Allusions to moonbeams, rainbows, starlight, clouds, and beautiful scenery may not be printed, because they serve to emphasize the blind man's sense of his affliction."

That is to say, I may not talk about beautiful mansions and gardens because I am poor. I may not read about Paris and the West Indies because I cannot visit them in their territorial reality. I may not dream of heaven because it is possible that I may never go there. Yet a venturesome spirit impels me to use words of sight and sound whose meaning I can guess only from analogy and fancy. This hazardous game is half the delight, the frolic, of daily life. I glow as I read of splendors which the eye alone can survey. Allusions to moonbeams and clouds do not emphasize the sense of my affliction; they carry my soul beyond affliction's narrow actuality.

Critics delight to tell us what we cannot do. They assume that blindness and deafness sever us completely from the things which the seeing and the hearing enjoy, and hence they assert we have no moral right to talk about beauty, the skies, mountains, the song of birds, and colors. They declare that the very sensations we have from the sense of touch are "vicarious," as though our friends felt the sun for us! They deny *a priori* what they have not seen and I have felt. Some brave doubters have gone so far even as to deny my existence. In order, therefore, that I may know that I exist, I resort to Descarte's method: "I think, therefore I am." Thus I am metaphysically established, and I throw upon the doubters the burden of proving my non-existence. When we consider how little has been found out about the mind, is it not amazing that any one should presume to define what one can know or cannot know? I admit that there are innumerable marvels in the visible universe unguessed by me. Likewise, O confident critic, there are a myriad sensations perceived by me of which you do not dream.

Necessity gives to the eye a precious power of seeing, and in the same way it gives a precious power of feeling to the whole body. Sometimes it seems as if the very substance of my flesh were so many eyes looking out at will upon a world new created every day. The silence and darkness which are said to shut me in, open my door most hospitably to countless sensations that distract, inform, admonish, and amuse. With my three trusty guides, touch, smell, and taste, I make many excursions into the borderland of experience which is in sight of the city of Light. Nature accommodates itself to every man's necessity. If the eye is maimed, so that it does not see the beauteous face of day, the touch becomes more poignant and discriminating. Nature proceeds through practice to strengthen and augment the remaining senses. For this reason the blind often hear with greater ease and distinctness than other people. The sense of smell becomes almost a new faculty to penetrate the tangle and vagueness of things. Thus, according to an immutable law, the senses assist and reinforce one another.

It is not for me to say whether we see best with the hand or the eye. I only know that the world I see with my fingers is alive, ruddy,

and satisfying. Touch brings the blind many sweet certainties which our more fortunate fellows miss, because their sense of touch is uncultivated. When they look at things, they put their hands in their pockets. No doubt that is one reason why their knowledge is often so vague, inaccurate, and useless. It is probable, too, that our knowledge of phenomena beyond the reach of the hand is equally imperfect. But, at all events, we behold them through a golden mist of fantasy.

There is nothing, however, misty or uncertain about what we can touch. Through the sense of touch I know the faces of friends, the illimitable variety of straight and curved lines, all surfaces, the exuberance of the soil, the delicate shapes of flowers, the noble forms of trees, and the range of mighty winds. Besides objects, surfaces, and atmospherical changes, I perceive countless vibrations. I derive much knowledge of everyday matter from the jars and jolts which are to be felt everywhere in the house.

Footsteps, I discover, vary tactually according to the age, the sex, and the manners of the walker. It is impossible to mistake a child's patter for the tread of a grown person. The step of the young man, strong and free, differs from the heavy, sedate tread of the middle-aged, and from the step of the old man, whose feet drag along the floor, or beat it with slow, faltering accents. On a bare floor a girl walks with a rapid, elastic rhythm which is quite distinct from the graver step of the elderly woman. I have laughed over the creak of new shoes and the clatter of a stout maid performing a jig in the kitchen. One day, in the dining-room of a hotel, a tactual dissonance arrested my attention. I sat still and listened with my feet. I found that two waiters were walking back and forth, but not with the same gait. A band was playing, and I could feel the music-waves along the floor. One of the waiters walked in time to the band, graceful and light, while the other disregarded the music and rushed from table to table to the beat of some discord in his own mind. Their steps reminded me of a spirited war-steed harnessed with a cart-horse.

Often footsteps reveal in some measure the character and the mood of the walker. I feel in them firmness and indecision, hurry and deliberation, activity and laziness, fatigue, carelessness, timidity, anger and sorrow. I am most conscious of these moods and traits in persons with whom I am familiar.

Footsteps are frequently interrupted by certain jars and jerks, so that I know when one kneels, kicks, shakes something, sits down, or gets up. Thus I follow to some extent the actions of people about me and the changes of their postures. Just now a thick, soft patter of bare, padded feet and a slight jolt told me that my dog had jumped on the chair to look out of the window. I do not, however, allow him to go uninvestigated; for occasionally I feel the same motion, and find him, not on the chair, but trespassing on the sofa.

When a carpenter works in the house or in the barn near by, I know by the slanting, up-and-down, toothed vibration, and the

ringing concussion of blow upon blow, that he is sawing or hammering. If I am near enough, a certain vibration, traveling back and forth along a wooden surface, brings me the information that he is using a plane.

A slight flutter on the rug tells me that a breeze has blown my papers off the table. A round thump is a signal that a pencil has rolled on the floor. If a book falls, it gives a flat thud. A wooden rap on the balustrade announces that dinner is ready. Many of these vibrations are obliterated out of doors. On a lawn or road, I can feel only running, stamping, and the rumble of wheels.

By placing my hand on a person's lips and throat, I gain an idea of many specific vibrations, and interpret them: a boy's chuckle, a man's "Whew!" of surprise, the "Hem!" of annoyance or perplexity, the moan of pain, a scream, a whisper, a rasp, a sob, a choke, and a gasp. The utterances of animals, though wordless, are eloquent to me—the cat's purr, its mew, its angry, jerky, scolding spit; the dog's bow-wow of warning or of joyous welcome, its yelp of despair, and its contented snore; the cow's moo; a monkey's chatter; the snort of a horse; the lion's roar, and the terrible snarl of the tiger. Perhaps I ought to add, for the benefit of the critics and doubters who may peruse this essay, that with my own hand I have felt all these sounds. From my childhood to the present day I have availed myself of every opportunity to visit zoölogical gardens, menageries, and the circus, and all the animals, except the tiger, have talked into my hand. I have touched the tiger only in a museum, where he is as harmless as a lamb. I have, however, heard him talk by putting my hand on the bars of his cage. I have touched several lions in the flesh, and felt them roar royally, like a cataract over rocks.

To continue, I know the *plop* of liquid in a pitcher. So if I spill my milk, I have not the excuse of ignorance. I am also familiar with the pop of a cork, the sputter of a flame, the tick-tack of the clock, the metallic swing of the windmill, the labored rise and fall of the pump, the voluminous spurt of the hose, the deceptive tap of the breeze at door and window, the crash of thunder, and many other vibrations past computing.

There are tactual vibrations which do not belong to skin-touch. They penetrate the skin, the nerves, the bones, like pain, heat, and cold. The beat of a drum smites me through from the chest to the shoulder-blades. The din of the train, the bridge, and grinding machinery retains its "old man of the sea" grip upon me long after its cause has been left behind. If vibration and motion combine in my touch for any length of time, the earth seems to run away while I stand still. When I step off the train, the platform whirls round, and I find it difficult to walk steadily.

Every atom of my body is a vibroscope. But my sensations are not infallible. I reach out, and my fingers meet something furry, which jumps about, gathers itself together as if to spring, and acts like an animal. I pause a moment for caution. I touch it again more firmly, and find it is a fur coat fluttering and flapping in the wind.

To me, as to you, the earth seems motionless, and the sun appears to move; for the rays of the afternoon withdraw more and more, as they touch my face, until the air becomes cool. From this I understand how it is that the shore seems to recede as you sail away from it. Hence I feel no incredulity when you say that parallel lines appear to converge, and the earth and sky to meet. My few senses long ago revealed to me their imperfections and deceptivity.

Not only are the senses deceptive, but numerous usages in our language indicate that people who have five senses find it difficult to keep their functions distinct. I understand that we hear views, see tones, taste music. I am told that voices have color. Tact, which I had supposed to be a matter of nice perception, turns out to be a matter of taste. Judging from the large use of the word, taste appears to be the most important of all the senses. Taste governs the great and small conventions of life. Certainly the language of the senses is full of contradictions, and my fellows who have five doors to their house are not more surely at home in themselves than I. May I not, then, be excused if this account of my sensations lacks precision? . . . . .

INSTITUTIONS FOR THE DEAF IN RUSSIA.

The start given to the instruction of the deaf by the Abbé de l'Epée at the end of the eighteenth century was very far reaching. Enlightened minds in all countries grew interested in the fate of these unfortunates.

Empress Marie, widow of Emperor Paul I, distinguished as much by her lofty mind as by her remarkable charity, initiated correspondence with Abbé Sicard, director of the Institute for the Deaf and Dumb in Paris, and obtained from him very useful information with regard to this special instruction.

In 1806, she established a small school for the deaf in her estate of Pavlovsk, placing it under the directorship of Abbé Sigmund, who came from Vilna to teach the five children she had taken into her school. This year, consequently, is the hundredth anniversary of the establishment of schools for the deaf in Russia. On account of a most regrettable misunderstanding, this anniversary was not celebrated, but the historical fact stands nevertheless.

In 1810, the St. Petersburg Institute for the Deaf and Dumb was inaugurated at the expense of Empress Marie, who, until the last days of her life, did not cease to be interested in the fate of the deaf. Instruction made satisfactory progress, but the political events were not of the nature to favor the prosperity of this institution.

After the death of Empress Marie, the St. Petersburg Institute for the Deaf and Dumb was abandoned to its fate, and, in spite

of the resources this establishment had at its disposition, this fate was not very brilliant.

In 1817, a similar institute was founded in Warsaw for the deaf and for the blind. Moscow, Riga, and Odessa inaugurated likewise such establishments, but the means of existence of which they were disposed were very precarious, and the result attained were insignificant.

In 1898, Her Majesty, the Dowager Empress, created the Curatorship of the Deaf and Dumb which bears her name; since that time a great many schools and workshops for the deaf have been founded in almost all the provinces of Russia.

St. Petersburg, seat of the Curatorship, naturally occupies the first place in the development of these institutions. The Curatorship possesses, in the neighborhood of the capital and in the capital itself, various establishments which we are going to mention.

There are at Murzinka: 1, the School of Marie, for 150 pupils, 100 boys and 50 girls, aged from 7 to 16 years; 2, the Murzinka workshops, for 100 boys, from 12 to 18 years of age; 3, a "School-Farm," for young girls, from 14 to 18 years of age, who learn to sew, weave, take care of domestic animals and breed them; 4, a laundry, for young girls, from 18 to 25 years of age.

These establishments are some 15 versts distant from the capital, and the locality is appropriate to the necessities. There are no less than 350 deaf and dumb located in this community.

There is in St. Petersburg a school for the deaf and dumb belonging to the establishments of Empress Marie, in which 160 pupils, 120 boys and 40 girls, are instructed; this is the old school founded in 1810; it has a special type of organization.

The Curatorship possesses also in the capital, workshops for carpentering and bookbinding, where the deaf work successfully; a preparatory school for little girls, and a home for aged deaf and dumb women. There are likewise special courses for the preparation of teachers, both male and female, for the deaf, and the establishment of which has rendered great services to the Curatorship.

In the vicinity of the city of Narva, it possesses a school for girls, where weaving and sewing are taught, and at Sestroretsk (Systerbeck) a school for boys, from 15 to 20 years of age, who are taught gardening.

There are in Russia at the present time in all 60 establishments for the education and instruction of the deaf, with an effective strength of 2,800 pupils.

According to the last census, the total number of deaf and dumb is 160,000. The existing institutions are consequently insufficient. Means are lacking. It is to be hoped that obligatory instruction will soon be introduced and that the necessary funds will be found to provide education for all the deaf and dumb of the Empire. —[J. Moerder, Privy Councillor, President of the Curatorship of the Deaf and Dumb, in Revue Belge des Sourds-Muets.]

DEAF CHILDREN IN HANOVER, GERMANY, CLASSIFIED IN A, B, AND C SCHOOLS, ACCORDING TO INTELLIGENCE.

The plan of the instruction of the Deaf has just been reorganied in Hanover. The classification of the pupils is to be effected hereafter on the basis of their intellectual aptitudes, in the same way as is being done in Schleswig-Holstein. For the admission of the pupils, the country is divided into two districts, and in each of them the pupils are admitted only every other year: one year they are admitted at Hildesheim; in the following year at Stade. During the course of the first year, the children are classified, according to their degree of intelligence, in three sections, A, B, and C. The pupils of sections A and B remain in the institution which they have entered; those of section C are sent to a special establishment at Osnabrück. This division of pupils differs, consequently, from the one made in Denmark, where the basis for the distribution of pupils among the sections rests on their degree of hearing. Whatever the system employed might be, it is evident that the pupils reap considerable advantages from it. It may be easily understood that such a system of organization may be inaugurated only in countries where the instruction is official and even obligatory. With regard to this, the Germanic deaf are more fortunate than their Latin brothers. They are also much better instructed.

Courses for adults have been inaugurated at Hildesheim; these courses are obligatory for all the deaf of the district under eighteen years of age who cannot prove that they know the studies of these courses.—[Revue Belge des Sourds-Muets.]

The following are the German states where the instruction of the deaf is obligatory; the year in which this obligation was decreed is likewise given: Schleswig-Holstein (1805), Saxony (1873), Saxe-Weimar-Eisenach (1874), Oldenburg (1876), Saxe-Coburg-Gotha (1877), Anhalt (1884), Saxe-Meiningen-Hildburghausen (1887), Lubeck (1888), Brunswick (1894), Bremen (1898), Baden (1902), Prussia (1906). In 1900, there were in Germany 34,344 blind, 48,750 deaf, and 340 deaf-blind.—[Revue Belge des Sourds-Muets.]

THE INSTITUTION PRESS.

AN ENDOWED FLAGSTAFF.

It gives one a peculiar thrill when in a foreign country to see waving in the breeze the ensign of his home land. The thrill is even greater when he realizes that the flag has been raised in his honor.

When Dr. Crouter entered the grounds of the Royal Asylum for the Deaf and Dumb at Margate, England, he had the pleasure of seeing the Stars and Stripes flying from the tall, graceful staff that stands beside the drive to the main building, and of knowing that it was flying in honor of his visit. Of course the courtesy was mentioned to Dr. Elliott, the principal, and he related the story of the flagstaff, "the only endowed flagstaff in the world," he said.

The staff "was erected in the first year of the reign of His Majesty King Edward VII, in commemoration of his accession to the throne," and the cost "was defrayed by the contributions of the present and last pupils and their friends."

We are indebted to Miss Hare, of the Margate School, for the following account of how the money was used:

"Besides paying for the flagstaff the sum collected was so large that we were enabled to buy twenty flags, one of which was made specially for us from a design by Mr. Johnson. It has a sort of medallion in the center and a finger touching the ear. The ground work of the flag is blue with 'Royal Asylum for the Deaf and Dumb' in bold yellow lettering.

"Perhaps the most unique feature of the whole affair is that the sum of £40, which remained over after flags and flagstaff were paid for, was used to endow the flagstaff. It was invested and the interest is used for painting and repairing it. I think it is done every other year.

"You will be wondering when we use these twenty flags and will commend our loyalty and also our impartiality when I tell you that we fly the Royal Standard on the King's birthday, Accession Day, and Coronation Day, and the Stars and Stripes on President Roosevelt's election day and birthday, the German flag on the Kaiser's birthday, and the French one on President Fallieres' birthday and so on; of course we celebrate the birthdays of the Queen and Prince and Princess of Wales in a similar manner. Then we try to inculcate patriotism by flying appropriate flags on St. David's, St. Patrick's, St. George's, and St. Andrew's days, and also to teach history by hoisting the Union Jack on the anniversaries of great battles such as Waterloo, Trafalgar, Hastings, etc., and also on Gunpowder Plot Day.

"The Church has a look in on Easter Sunday and Monday, Whitsunday and Monday, Ascension Day, and such high festivals, so our flags get plenty of use.

"Mr. Boyce has a squad of twenty boys who march in procession carrying the flag; while two of their number run up the special flag for the day the others stand at attention until the flag is in position, then salute it and march away. The same ceremony is gone through when it is hauled down."—[Mt. Airy World (Pa.).]

WHAT IS THE COMBINED METHOD?

In the change of methods at the Belleville School, as indicated below, we have additional evidence that the combined method, or the arrangement by which pupils in manual classes receive training in articulation for short periods each day or week, will in time be entirely superseded in American Schools for the Deaf.—[Oregon Outlook.]

We agree with the latter part of the above, viz: that the arrangement by which pupils in manual classes receive training for short periods each day or week will in time be entirely superseded in American Schools for the Deaf. In fact, this arrangement is practically obsolete now, only a very few of the smaller schools continuing it.

But the part of the clipping to which we take strong exception is that this "arrangement" is the combined method. From the language used it would appear that the Outlook classes only those schools as combined which have this old-style arrangement for articulation. There was a time, when articulation was first introduced, that this was the only meaning of the combined method, but now the general accepted meaning of the term combined method schools is those schools which contain separate manual and oral classes. The Arkansas School is considered as employing the combined method and we have not used this old-style arrangement for articulation classes in many years, but we have eight pure oral classes. The Ohio, Minnesota, Iowa, Kentucky, and Missouri Schools are only a few other examples of the combined schools—schools that have both manual and oral classes.

The question of methods is a right puzzling one at times, but we are surprised that our esteemed contemporary should have made such a misleading statement as to the combined method.—[Arkansas Optic.]

We admit the term combined method is extremely vague and indefinite as generally used; therefore in using it, as quoted above, we were careful to define what was meant. When our Arkansas friend adopts a careless and common misuse of the expression, and taxes us with making a misleading statement regarding it, we are indeed surprised.

Schools which follow precisely the arrangement, formerly in use at Belleville, and still followed by the other non-oral schools in Canada, the Kendall School, and others of its class in the United States, are certainly most properly called combined method schools. We think, as applied to them, the terminology is accurately descriptive and precise, but is not so, as applied to schools of the Kentucky or Arkansas type, for which a more proper designation is that followed by the Annals, *i. e.*, "combined system schools."

The term "combined method," implies the use of a combination of methods with the same individual, or group of individuals. This is the meaning of method in ordinary pedagogic discussion. On the other hand, schools employing different methods for *different* groups of pupils, should be called *combined system* schools, as not employing any single method, but a variety to any grouping of which the broader word "system" is more properly applicable than "method."

Our friend will observe that Dr. Fay, in the Tabular Statement published annually in the Annals, carefully avoids any reference, statement or definition as to "the combined method." Also through a committee report of 125 pages three very eminent representatives of the Colorado Conference of Superintendents in 1892 labored in a vain effort to reach a satisfactory definition and classification of methods, and we note that all these scientific leaders carefully avoided the term combined method, though combined system was freely spoken of. On page 306, Dr. Noyes says, "I regard system as the proper word to use in speaking of the 'Combined System:' method here is incorrect in my view. Under a system several methods may be employed."

We had in mind this distinction between method and system in the education of the deaf, when last spring in an editorial commenting upon the very marked tendency of late years toward the segregated or separated application of methods, we spoke of the probable "doom of the combined method." At

the same time we clearly realized, that in many of the combined system schools, in the so-called "pure oral classes," manual spelling, signs, and writing are used to such an extent that the pupils are being taught by a combined method, *not* the *pure* oral method, as defined by its friends. We have heard the Superintendent of a school with ten or more "pure oral" classes say that he believed his oral teachers used more signs than the manual teachers, who spelled constantly. In this connection, we might again quote the report referred to, in which (page 313) Dr. Fay says, "There is but one oral method, and pupils are either taught by it or they are not. If they are taught speech and speech reading as an accomplishment, while their general education is carried on chiefly by other means, they are not taught by the Oral method."

If the editor of the Optic will give us a brief, complete, and accurate working definition of the combined *method,* as he understands it, we should certainly appreciate his effort, and doubtless there are others in the profession who would like additional light on the subject.—[Oregon Outlook.]

SHOULD THE DEAF BE "SOCIAL?"

Certainly the deaf should not be unsocial in any extreme sense. It is not good for man to be alone and the danger of the deaf being shut off or shutting themselves off from their fellows is very great. Morbid, morose, and perpetually unhappy are those to whom such bitter seclusion falls. It does not follow, however, that the deaf should go to the other extreme; a deaf man who really enjoys "Society," with its formal dinner and other functions, and the necessity it lays upon its votaries of meeting strange faces and strange voices, is as rare as snow in summer. The strain of such a life is little less than the strain of a secluded loneliness.

The deaf do need a social life of the right kind. A wealth of it is open to them among their families and friends. Calling and receiving calls, excursions, picnics, boating, fishing, driving, motoring, walking, mountain climbing, and even theater-going—all with congenial companions—have in them a source of exquisite pleasure for the deaf, if indulged in with sanity and common sense. At all such times it is usually possible to single out temporarily an individual companion, with whom to heighten your own pleasure in the occasion by sharing it. At the theater, pleasure of the highest kind may be found, not in trying to hear, but observing the scenery, staging, acting. A deaf friend confessed to me that he has been so moved that his eyes were moist, though he heard not a word. Such a rational social life will do much to give tone and cheer to sufferers from deafness; it will show us how slight the difference is between us and others, how much of experience we have in common.

But there is another need, perhaps even more important, and that is—work. In a personal letter to the editor Grace Ellery Channing enforces this necessity: "I am more and more sure," she says, "from my own remarkably wide experience with the deaf, that what most of them need is to have their minds turned not upon that affliction, but away from it; that the greater portion suffer from lack of some absorbing occupation which would healthily remove their mind from their own sufferings; that once the occupation found, it is positive gain, not loss, for the deaf to live very much out of 'Society,' rather than to spend their nervous energy seeking it, always on unequal terms and always at an expense out of proportion to the expense of their neighbors.

"I believe the sooner they accept a certain fine seclusion as a part of their peculiar lot, instead of trying feverishly to secure what they can never freely secure, the sooner they will recover health of nerve and poise of soul. Only this demands that they find work to do. Well, there is plenty, open even to the deaf! Would you advise the blind—or rather the weak-eyed who wished to preserve their sight—to strain it incessantly, in glares of gas jets and artificial fire? That is what the deaf do who try to be 'social' in the ordinary sense. I have practiced what I preach—with infinite benefit. It is easy to make the world accept you on your terms, if you will spend some energy in becoming worth its acceptance—say half as much as you spent before, trying to get accepted on its terms."—[Courage (N. Y.).]

A FORGOTTEN WORTHY.

Probably very few of the readers of the Register are aware that the second school for the deaf established in the State of New York was in the Mohawk Valley. This institution passed out of existence many years ago, and only a few of our very oldest deaf people are able to remember anything about it. Originally established at Buel, a small village in Montgomery county, about ten miles south of the Mohawk River, it was subsequently transferred to Canajoharie. The principal of the school was a man named Backus, who was for many years publisher of the Canajoharie Radii. The history of the school has, we believe, never been written, and the subject of its origin and career affords an interesting field of research for some one with antiquarian tastes. The school, we believe, flourished for a number of years until the improvement in transportation facilities made it possible for children living in the northern part of the State to be sent to the school in New York city, and from this time its decline was rapid. At present its existence is only a vague memory.

Standing in the old cemetery a mile south of Nassau, Rensselaer county, there is a gravestone which recalls the school, and is, perhaps, the only existing memorial of a young man who had much to do with its success. The stone reads as follows:

To the Memory of
ELIJAH GRIFFIN, A. B.,
Principal Teacher of the Deaf and Dum
Asylum at Canajoharie,
Who departed this life, Aug. 21, 1831,
Æt. 26 years, 2 months and 13 days.

I warn the living not to say
Tomorrow shall be as today;
Tomorrow, oh, you only may
In darkness mourn your sad delay.

—[Rev. H. Van Allen, in Deaf Mutes' Register (N. Y.).]

USE THE ENGLISH LANGUAGE "ALL THE TIME—EVERYWHERE —FOR ALL PURPOSES."

Anent the use of finger-spelling in the school-room, Mr. Warren Robinson has the following to say in the Wisconsin Times:

"This thing known as finger spelling cannot be too strongly urged upon teachers of the deaf, particularly those who instruct manual classes. A short time ago a little fellow sat before the writer in a school-room and asked as naturally as a hearing child for some writing paper. This child had been taught by a teacher who is heart and soul an advocate of insisting that deaf children in her classes shall spell out to her their wants and some of their class-room work in language. This incident is only one of hundreds which unmistakably show how much may be accomplished in the acquisition of language by a stubborn insistence on this method of communication.

"For years the writer has stood for this practice and insisted on its being carried out. It seems little short of criminal to let such an opportunity of developing, not only language, but the invaluable habit of attention and concentration to slip by during the early years of childhood when the mind is so susceptible and plastic. The excuse that a large number of deaf children are not intelligent enough to do it is without foundation, except in the case of those few bordering on feeble-mindedness."

The editor of the News is objecting because we have to say we are "glad *of* it," and "sorry *for* it," and thus make the English language more difficult for deaf children to master; and our new Brother Sowell of the Ne-

braska Mute Journal wishes to know what can be done about it. We venture to suggest submitting the matter to Prof. Brander Matthews, who has just finished revising the spelling of three hundred words for use in Columbia University. Prof. Matthews might be able to so systemize the use of prepositions that deaf children and foreigners would find it easier to master our language. And, we might add, so that the rest of us would have to learn it all over again. Another, and simpler, remedy might be to keep on being "glad *of*" and "sorry *for*" everything until our pupils never forget which preposition is the right one. In the constant use of English, spelled, written, and spoken, lies our strongest aid. Our pupils are not so unobservant after all. Recently, in the course of a few moments' talk on the destruction of our native forests, the writer happened to spell the words "used up." When the papers came in, two out of six contained the foregoing expression, used in the right sense; and they were not especially bright pupils either. Keep everlastingly at it.—[Michigan Mirror.]

In a recent issue the Palmetto Leaf had an editorial criticising most strongly the teacher who carries on the work of the school-room in a taciturn manner, correcting slates and papers without comment, and saying as little as possible on all occasions outside of the regular routine of the class-room. We fully agree with our editorial friend in all that he says on the subject. We believe that the teacher of the deaf should always be bubbling over with language, and always on tap. While correcting written work, he should indulge in a running fire of comment in the form of spelled English, or spoken, if it be an oral class. He should always be ready to make remarks in the same way concerning whatever happens in the school-room, and should encourage the pupils to do likewise. Such a practice will go far toward introducing colloquial language into the class-room where it is so much needed as a set-off to the superabundance of cut-and-dried text book language that the pupils get.—[Companion (Minn.).]

The *constant effort* is what brings results, not the easy way. Whenever signs are used when the English language should be, a golden opportunity is thrown away. Whenever a teacher demands the use of, or a pupil endeavors to use good English, a golden opportunity is seized. The results of honest endeavor to use clear and choice language at all times will be in proportion to the *efforts* made.

It really does not make such a great difference what the method of instruction is so long as the pupil is taught to think independently, intelligently and persistently, and is required to express *all* his thoughts carefully and clearly. It is a business proposition after all. And business is business. Those that pay dividends are usually those best managed, directed, and constantly watched. How are your teachers conducting your business? Are your pupils doing their own thinking? Are they using their own thoughts? Are they using English?—[The Utah Eagle.]

The most prominence is given to the acquisition of the English language. This is the hardest thing which a congenital deaf person has to acquire. The English language presents greater difficulties to him than a foreign language does to hearing or speaking people conversant with English. No one appreciates as do the teachers of the deaf these difficulties. The English language is full of figures of speech, technical phrases and idoms, all of which the hearing person becomes conversant with from childhood, and so does not notice any difficulty in. Whenever a deaf mute is encountered who has a working command of ordinary English, he must be given credit for a great deal of effort.—[Supt. Hammond, of the Kansas School for the Deaf, in his Report.]

However much the advocates of the oral and manual methods of teaching the deaf may differ on some points, there is one common ground on which they can meet and coöperate heartily, and that is as regards the importance of giving the deaf the best command of the English language that time and circumstances, reinforced by faithful teaching, will permit.—[Companion (Minn.).]

How to give frequent and constant repetition of language to the deaf is a problem that has not been solved. The hearing child gets this without conscious effort in the main, while the deaf child can learn almost nothing of language without the strain of attention. The hearing child can listen and converse while at work or play; whether he chooses to listen or not, his ears receive words and expressions and in this way a large part of his vocabulary is practically forced upon him. If the deaf child converses, work or play must stop; he gets little or nothing of the general conversation, and he is deprived of the pleasure of sitting in the dark and listening to a story. It is very doubtful if a hearing child with no greater opportunities could use English any better than the half educated deaf child does.—[Mt. Airy World (Pa.).]

If all the teachers in any school for the deaf would unite in keeping the sign-language under rigid control in the class-room, and substitute therefor the English language, spelling it, speaking it, or writing it colloquially; surrounding the pupils with it every day, cutting short routine school-room work in order to gain more time, then there would be a marked advance in the use of English by the pupils of that school, as surely as two and two make four, not sometimes, but all the time.—[Companion (Minn.).]

The above is from the pen of Dr. James L. Smith, of the Minnesota School, who is acknowledged to be one of the strongest defenders of the sign-language living today. We have long thought that the best way to learn the English language, or any other lanuage, is *to use it,* not for a little while, but *all the time.* And if we ever hope to see any marked improvement in the language of our pupils they must be made to use it—not only the pupils, but the *whole* school.—[Michigan Mirror.]

Among the good resolutions for the New Year, it might be well for our teachers and pupils to make one that they all will try earnestly to use more colloquial English and fewer signs, both inside the school-room and out.—[The Companion (Minn.).]

While our school has always recognized the importance of English, either spoken, spelled, or written, there seems to be a more determined effort this year on the part of all our teachers to limit the use of signs in their class-rooms.—[The Arkansas Optic.]

The Philosopher is not far from Paradise when he rides in the subway. The only drawback is that whereas his hearing seems miraculously restored to him, it is just as inevitably taken away from his companion; then does the Philosopher taste the woes of the friends of a deaf man as he rasps his throat in trying to make himself understood. But when his companion speaks, without effort, without even trying to read the lips, he hears—actually *hears*—every word. On the train, on the trolley, or in the crowded streets it is the same; the Philosopher hears better than his friend who is not deaf!

What is the reason for this miracle? Undoubtedly there is truth in the explanation given by physicians that the vibrations set up by other noises make the deaf ear more sensitive. But the Philosopher is convinced that there is a simpler explanation. Speech that would be loud in the silence of a dungeon, is a mere whisper in the roar of a subway train. But the roar of the train is not nearly so loud to us who are deaf as to our hearing friends. They instinctively raise their voices to overcome the noise they hear; we, who do not hear that noise so loudly, get the benefit of the raised voice.

There are two bits of evidence to show that this explanation fits the facts. First, it is only voices we hear better in a noise, not watch ticks or anything else; second, if our companion should be deaf too, he will not raise his voice so much and we shall find difficulty in understanding him.

But if the Philosopher is in Paradise when extraneous noises open the doors thereof, there are other times when he feels far, far from there. There is nothing that so quickly transports him from the portals as to be thrown into a general conversation among strangers. Then he must strain his lip-reading

and his hearing to their uttermost capacity. Under no other conditions are blunders so likely to occur; and under no other are they so humiliating. If he possibly can, he will detach one of the company for a tête-à-tête; it may not be "correct," but it brings a sudden rush of self-confidence and happiness that more than salves the conscience for any lapse of propriety.

The deaf person without the tact or generalship thus to detach one member of the party, or unable to read the lips, is completely marooned. He might better be alone in the solitude of a desert. Suppose four people should be together with a box of candy, and in passing it suppose one of the four should be repeatedly left out—the rudeness is unthinkable. But suppose one of them is deaf, do not the other three often pass round the conversation to the exclusion of the fourth? What's the difference?

If the Philosopher stopped there he would be feeding the blues most indulgently, but—there's lots of difference. Our hearing friends are not selfish, they are only thoughtless. They do not realize what it means to us to be so left out. It is our place to help them realize it; we must push in; at the sacrifice of our pride, we must ask for the joke when the smile goes round; we must not let ourselves be left out. Even at best, however, we will miss things; but that is not like missing the candy. Every deaf person has, or should have, a rich vein of thought which he can mine upon these occasions. Let him be assured that the rewards will be, ninety-nine times out of a hundred, greater than he would have gained from the abandoned conversation.—[Courage (N. Y.).]

In the latest issue of the ASSOCIATION REVIEW, Mrs. Alexander Graham Bell questions the justice of the Messenger's remark, occurring in an appreciative review of Dr. Crouter's work in the Pennsylvania Institution, that the quality of the directors of that school is one of the good things for which he deserves no credit, as they were not of his selection. Mrs. Bell very truly remarks, expanding a hint which was thrown out in the article referred to, that the liberality of members of the board has been called forth by confidence in the principal's admirable management. So the sweet sounds which Paderewski evokes from a Steinway grand do credit to his skill. But if he had a kitchen table instead of a piano to work on, he couldn't do much. Mrs. Bell evidently has little conception of the difference between directors and directors.

For instance, to take a school nearer to Pennsylvania than to Alabama—one of the board, after carefully reading the report of one of our foremost institutions, observed: "A very excellent institution; I see they realized $47.30 last year from the sale of swill." Again, when a certain principal, having no provision afforded for teaching manual training had contrived to get a few boys so far instructed that they had built to scale a very neat model of a cottage from working drawings, and was using this as an argument for an appropriation, one of the directors objected: "Why, there's $1.50 worth of good lumber wasted on that gimcrack!" And in the State School of—let us say—No Man's Land, one of the board wished to raise the salary of an officer appointed through his influence, without experience or any other qualification, to a very unusual figure for the kind of service rendered. The finances of the school would hardly bear it, but he had a ready scheme for economizing. "Feed the children on mush and molasses!"

"You can't make a silk purse out of a sow's ear," and even Dr. Crouter's splendid enthusiasm and success would not induce a thorough-paced self-seeking politician to divert one moment's thought from his plans for his own advancement to the welfare of the children in the school.—[The Messenger (Ala.).]

A SCHOOL MUSEUM.

One of the greatest difficulties met with in teaching the deaf is that of conveying to them any conception of the appearance and qualities of things which they have never seen. Signs are of but little use for this purpose and,

moreover, it is desirable that signs be used in the class-room as little as possible. The only way in which this difficulty can be overcome is to show the object itself, if one can be obtained, if not, a picture of it. It will, therefore, readily be seen that it is very important, in a school like this, that there should be available to the teachers as large a variety as possible of objects such as might be needed in the class-room. At the first meeting of the Teachers' Association this season, this subject was considered and it was decided to begin at once to make a collection of suitable articles and pictures of all kinds. These, when obtained, will be carefully classified and, where necessary, mounted, and then catalogued in such a way that a teacher can at any time find what he wants without any delay. A room has been set apart for this purpose and curators appointed, and some progress has already been made in securing needed articles and illustrations. We are especially desirous of getting samples of all kinds of articles in common use, in the natural state and in the different stages of manufacture, also pictures illustrating historical events and national manners and customs. If any of our readers can aid us in this work, either by supplying the needed articles or telling us where they can be obtained, we will be grateful.—[Canadian Mute.]

MR. VAN PRAAGH'S SUCCESSOR.

Mr. Geo. S. Haycock, recently of the Glasgow School for the Deaf, has been appointed Director of the College for Teachers of the Deaf, Fitzroy Sq., London, England.

We congratulate both Principal Haycock and the trustees of the college on the appointment. Mr. Haycock was well known in the Scottish educational world, and his mental attainments, experience, and high personal qualities eminently fit him to succeed Mr. Van Praagh.

Mr. Haycock is not unknown to the profession on this side of the water, as he was one of the first teachers from Britain to attend an American Convention, and his impressions of American Schools and their work, which he afterwards published, were highly complimentary. We wish him every success.—[Rocky Mountain Leader (Mont.).]

Says the Rocky Mountain Leader (Mont.): "Another sign of the forward movement is that seen in a by-law passed not long ago by the Trustees of the Colorado School. The by-law is to the effect that only the best teachers shall be employed, and that in order to obtain them suitable salaries shall be paid. The standard set is high, viz., a diploma from some creditable institution of learning, at least a full year's attendance at a normal school for special training, and two years of successful experience in the work. Again we read that the Idaho School, the youngest of the American schools, pays two lady teachers $1,000 and $1,100 per annum, respectively, and one male teacher $1,200 with board. These salaries are a fair remuneration for good teachers. And if good teachers are to be kept in the profession, and others induced to enter it salaries must go higher and be somewhat in proportion to the increased cost of living." Good for Idaho. The above figures show well for the enterprise of the man at the head of that new school. The male teacher referred to in the above left this school two and half years ago, where he was getting at the time only $720 per annum without board. Quite a raise for a young fellow. His salary is larger than any paid a teacher here, and counting his board it is at least equal to that of the principal of this school. Another young teacher who was receiving $775 here two years ago now has a position in an eastern school where he commands a salary of $1,300, and will likely get more before he reaches the limit. Texas will have to move up several notches to be on a par with some of our younger States in the west, not to speak of the older eastern States, if she does not wish to indulge perpetually in the exceedingly unprofitable practice of training teachers for other States. We tried to impress our solons up at the capitol last winter with this fact, but they would

not be impressed. If other States are behind in the matter of teachers' salaries Texas is away behind.—[The Lone Star (Texas).]

A class in nursing has been formed at the Ontario, Canada, School. We think the step taken by the authorities a very commendable one. Of course it would be hardly possible for them to achieve success as trained nurses in hospitals, but when they become wives and mothers, they will have the advantage of knowing just what to do in any emergency. The deaf wife has heretofore had to gain experience in the sick room at the expense of the patient who undoubtedly must suffer more from ignorance on the part of the nurse than from the disease itself. This can be avoided to a certain extent at least by previous training, such as is now being given the girl pupils of the Canadian School.—[North Dakota Banner.]

Boston can boast of a deaf mute who attends a soda fountain and dispenses soft drinks to his customers at 2214 Washington street. His name is Geo. Pike. Few persons who enter the candy store, where George tends the soda fountain, realize that a boy who is deaf and dumb waits upon them. He does not appear to make any special effort to watch the lips of his customers. Only an acuteness of vision is apparent. You may ask for a chocolate soda or grape frappe and he will serve you right. His employer has nothing but praise for George, as to his honesty, alertness, and general intelligence.—[Illinois Advance.]

Miss Bennett and Miss Eddy attended the Northampton Summer Normal Class at the close of last session. We need more teachers in the profession who are progressive enough to go thousands of miles searching for the best methods, and the most attractive way of presenting them.—[Utah Eagle.]

We congratulate both the School and the teachers—the former on having such live and progressive members of its faculty, and the latter on being connected with a school that pays them so liberally that there is something left over for self-improvement after living expenses have been met.—[Kentucky Standard.]

We are glad to see the deaf teachers of Utah taking summer courses at the various summer schools and Universities. Brother Driggs, you have a fine lot of progressive teachers. We hope other teachers of the deaf will follow their example and go to school every summer; so they can come back to the school with some new ideas and methods. They will be much benefited themselves and the pupils will enjoy their work more under them.—[School Helper (Ga.).]

A recent issue of The Advance had a cut of Dr. Philip G. Gillett, who for so many years blazed the way for educators of the deaf. About fifteen years ago it was noised about here that "Dr. Gillett is coming." We remember the time, and, clearer still, we remember the man. Late into the night did we sit and listen to the man—so broad and so liberal and so grand.—[Palmetto Leaf (S. C.).]

The British Deaf Times gives an account of the trial of a suit for libel against Henry Labouchere, brought by Dr. H. N. Dakhyl, who professes to be able to cure deafness. Mr. Labouchere, in his paper, Truth, called Dr. Dakhyl a quack, and warned his readers against sending him money for the treatment of deafness or any other disease. The jury found for Mr. Labouchere, and judgment was given accordingly with costs.—[Silent Worker (N. J.).]

VISIBLE SPEECH DEPARTMENT.

THE MELVILLE BELL SYMBOLS.

In the year 1874, a little magazine called THE VISIBLE SPEECH PIONEER was maintained by Dr. Alexander Graham Bell, for the benefit of students of the Melville Bell Symbols. It contained stories, verses, and selections written in the various forms of Visible Speech—script, line-writing, and print; and articles in ordinary script on the theory and practice of visible speech, articulation teaching, and on speech or lip-reading.

Its chief design was to familiarize pupils with the use of the symbols, Dr. Bell's idea being that it is impossible to obtain the full benefit of the symbols, or to realize their value, until one is so accustomed to their use as to be able to read them as easily as ordinary print. For this reason Dr. Bell had the pupils of his normal class write out many of the visible speech pieces as an essential and important part of their regular class work.

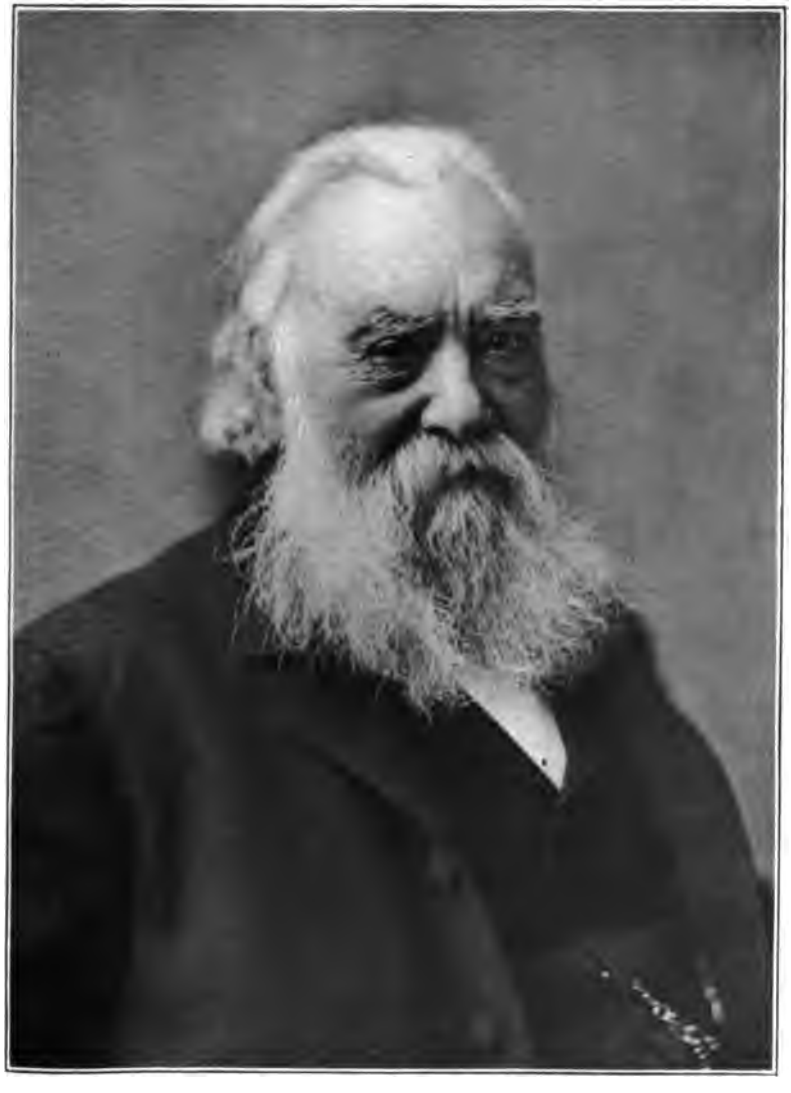
There being no visible speech type, the magazine was written throughout by hand—the editing and much of the writing being done by Dr. Bell himself. Necessarily, the edition was limited to one copy, but bound between stout pasteboard covers, it circulated among his own students and those of other schools. It ran through half a dozen numbers, and was discontinued when Dr. Bell left Boston and gave up the active practice of his profession.

From that time until now, no periodical devoted to the interests of Melville Bell's Symbols has been published, and it has been impossible to obtain in easily accessible form that abundance of attractive reading matter in Visible Speech which Dr. Bell deemed so essential to a proper appreciation and use of the symbols.

It is now proposed to take up as a department of the ASSOCIATION REVIEW the work laid down so many years ago.

Following along the lines of the VISIBLE SPEECH PIONEER, this department will publish articles on Visible Speech—its theory, practice, and applications. It will print reading matter in the symbols written in simple language, adapted to the use of pupils as well as teachers.

An especial feature will be a sort of Question Box, consisting of



Alex. Melville Bell

communications from users of the symbols who desire knotty points elucidated, with answers thereto by experts.

Other features will be Letters to the Editor, and news of the progress made by the symbols abroad.

The Visible Speech articles will be by different contributors. No attempt at exact uniformity of pronunciation will be made, for such does not exist among people at large. The American of Boston is distinguishable from the American of Chicago by his peculiarities of accent, and it is one of the greatest merits of Visible Speech that these faint shades of difference can be portrayed with the greatest nicety. It is believed, therefore, that what slight differences of pronunciation appear in the work of our contributors, so far from being disadvantageous, will be a positive benefit. We do not want to give our pupils a stereotyped pronunciation, but to have their speech approach as nearly as may be to that of people about them. Another point in favor of some variety in the articles is, that it will accustom our pupils to expect variety in the speech of their friends and make allowance for it. In this way lip-reading will be assisted.

The pages devoted to the Visible Speech selections will be electrotyped for printing as separate leaflets for use in school-rooms, and will be supplied to those who desire them for the bare cost of printing and mailing.

This department constitutes a new departure in journalism, for the ways of the symbols are not the ways of ordinary English writing. But we feel that a great need exists which the symbols are ideally adapted to meet. Keenly aware of the greatness of our task and of our own limitations, we yet are confident of the kindly sympathy and interest of our readers and hope for their assistance in making our undertaking a success. M. GARDINER.

Following the policy outlined above, the three symbolized pieces printed in this number are by different writers, and vary slightly in pronunciation according to their preferences. The general accuracy of their work is, however, assured.

LETTERS TO THE EDITOR.

EDITOR REVIEW: I want to thank you for the Visible Speech story in the December REVIEW. It came in just right for me. I was just finishing the work on the consonants and vowels, using Miss Yale's pamphlet as my guide, and had taken up the Visible Speech symbols in connection with it. I gave the story to my cadets

as a test of their knowledge of the Visible Speech symbols. They enjoyed it and worked it out nicely. Today we took up the subject of "clicks," using the chapter on Consonants in Dr. Bell's "Mechanism of Speech" as a basis, and had a most interesting hour.

S. W. G.

EDITOR REVIEW: Can you suggest some publication on Visible Speech which would be helpful in obtaining the exact positions by way of illustration? We have "Mechanism of Speech," but should like something more along this line. Can you suggest some Primer etc. of Visible Speech? G. V.

["English Visible Speech in Twelve Lessons," by Alexander Melville Bell, is such a Primer as is asked for. It may be obtained by addressing the Volta Bureau, Washington, D. C. Price, 50 cents.]

EDITOR VISIBLE SPEECH DEPARTMENT OF THE REVIEW:

You will be pleased to hear that I am taking a deep interest in the Visible Speech Department in the REVIEW. I am heartily glad that Mr. Booth will hereafter publish still more Visible Speech matter in it, for it will afford stimulating practice for those who are interested in the work. I have been studying "English Visible Speech in Twelve Lessons" for some time, which enables me to read the Visible Speech stories in the REVIEW. I confess it was very hard at first to distinguish so many words close together without *space* and *punctuation*, but have finally succeeded, which the enclosed translation [printed below] will show you. It interested me very much when I discovered through the symbols that the letters of *warm* and *corn*, and , sound alike. I could not see any sense in them at first, but the more I study the better I understand, and it has proved a revelation to me. I am very anxious to further my knowledge in regards to Visible Speech. Will you kindly advise me what books on the subject will be best for me to study. I will be greatly obliged and order at once. E. S.

THE ANT AND THE GRASSHOPPER.

One warm day in summer an ant was busy in the field gathering grains of wheat and corn, which he laid up for winter food. Grasshopper saw him at work and laughed at him for toiling so hard when others were at ease. The ant said nothing, but after months, when winter came and the ground was hard, the grasshopper was nearly dead with hunger and came to him to beg something to eat. The ant said to him, If you had worked when I did instead of laughing at me you would not now be in need.

[The translation is correct with the exception of one or two slight errors due evidently to oversight.—EDITOR.]

[EDITOR'S NOTE.—*These extracts from a letter in reference to the use of particular symbols in our selections will interest our readers and illustrate the latitude we propose to allow individual contributors. In this connection it is interesting to note that the writer detects the use of* ɪ *in "air" and "there" in "The Story of Ponto" in this number, as of New England origin, although quite unaware that the writer was a New Englander.*]

"I much prefer to make a distinction between accented and unaccented syllables by the use of ɪɤ for the former and ɪɤ for the latter (with but few exceptions). Contrast the final syllables in '*proffer*' and '*prefer*.' The difference is considerable. Why not indicate it when we can so readily do so by the use of ɪɤ in contrast with ɪɤ? I do not make any distinction between final *ar*, *er*, *or*, but use ɪɤ for them all when unaccented. It has often seemed to me that ɪ, if strictly interpreted, is inadequate to represent the digraph *er* when accented, and that it should have a glide of some sort, even for speakers who can hardly be said to use glide ɤ. But I have plenty of authority from Dr. Bell for the use of ɪ without the glide, and he has so strongly expressed his disapproval of attempting to teach glide r (ɤ) to the deaf. Both Prof. Bell and Dr. Bell have given us authority for the use of full consonant r (ɷ) when one word in a rhetorical phrase ends with r and the next begins with a vowel, as, *his hearers were at first*, Əɪɷ ɪʊ etc., and *laughter of all*, ɷɟ; and I follow that rule.

"In *there* and *air* you have ɪ (ă), but I have indicated ɪ (ĕ), as I know Dr. Bell prefers it. Many people, especially in New England, do say ɪ, as you no doubt knew, and it is so taught in Northampton. I prefer ɪ generally.

"Probably Dr. Bell would write *story*, ʊʊɟɷʃ, or ʊʊɟɪɷʃ. I like ʊʊɟɷʃ, or ʊʊɟɪɷʃ. To be consistent, if we should write *shore*, Ωɟɤ, we should write *more*, Əɟɤ. I like Ωɟɤ, Əɟɤ, because I say it and because it is marked ō in the dictionaries. Dr. Bell advises Əɟɤ. Prof. Bell uses ɟɤ. What do you say? Dr. Bell would write *before*, ƏʃƷɟɪ, instead of ƏʃƷɟɪ, as I have done. I pronounce it as I wrote it, ɟ, although I was well aware that he had expressed his preference for ɟ.; (see MECHANISM OF SPEECH, p. 110). This is foreign to my pronunciation."

VISIBLE SPEECH—THE ELECTRIC TELEGRAPHIC TYPEWRITER—SPELLING REFORM.

The following correspondence, appearing in recent numbers of the Scientific American, can not but be of interest to our readers, in view of all the possibilities involved in connection with the subjects of *spelling reform*, the invention of the *electric telegraphic* or

telephonic typewriter, and *Visible Speech.* Is it not possible that these three things will come into intimate complemental relationship, such that they will come into use all at once and together, at first for commercial purposes, and later, for economic reasons for all purposes, with every nation and tongue employing the same mechanical apparatus for transmitting and recording speech, the same spelling—for identical sounds, and the same alphabet—phonetic and physiological, constructed upon the principles of the Bell symbols?

Since the publication of the article by M. G. Bell, in the Scientific American, a large number of inquiries has come to the superintendent of the Volta Bureau from all quarters of the country and abroad, with reference to Visible Speech, asking for information and literature upon the subject, which of course has been supplied. It is not impossible that this literature has in instances been called for by practical inventors, who may at once proceed to utilize the Bell physiological alphabet thus brought to their notice, in the development of a *voice writing machine,* which may be the next great invention to be given to the world. F. W. B.

How Science Might Force a Spelling Reform.

To the Editor of the Scientific American:

In the main operating room of the Postal Telegraph Cable Company, in Chicago, one can see the electric typewriter "quad" between Chicago and New York, also the "octopus" between Chicago and St. Louis. These marvelous instruments both send and receive telegraphic messages moving over the wires in the Morse code. At the sending desk, say in New York, a young woman typist operates the keys of a specially constructed typewriter, while at the receiving end, in Chicago, the message is automatically transcribed in Roman type on the customary form ready for delivery.

The electric telegraphic typewriter is suggestive of great possibilities, and in the mind of a layman, naturally raises the question: "What insurmountable obstacle prevents a similar attachment to the telephone?" Would it be any more astonishing than other recent discoveries in electricity? One must admit that the fundamental principles of the telegraph and telephone are widely different. At the same time, in a purely phonetic language like the Spanish, one has for each letter a fixed, standard unit of sound with which to deal. German, also, is relatively phonetic as compared to English. When we come to the latter, our mother tongue, however, we realize that such an instrument, if ever invented, could never transcribe into the word "knowledge" the sounds "n-o-l-e-j." Therefore, the Anglo-Saxon commercial world would at once demand a phonetic alphabet, if it should be thus offered by science. No business house

could resist the temptation to purchase an "automatic stenographer," always ready and infallibly correct. E. F. McPIKE.

CHICAGO, ILL., October 21, 1907.

VISIBLE SPEECH.

TO THE EDITOR OF THE SCIENTIFIC AMERICAN:

In reply to your correspondent, E. F. McPike, in your November 23 issue, I would point out that "science already offers a perfect phonetic alphabet," which only requires to be better known to be in universal use by the commercial world, not only of the Anglo-Saxon, but of every nationality.

It is the creation of the late Alexander Melville Bell of this city, who gave to it the name "Visible Speech." In every respect it is a great scientific invention, being based on very accurate knowledge of the mechanism of speech, and profound study of the vocal organs of mankind.

"Visible Speech" is a species of phonetic writing, which constitutes a method of symbolizing the movements of the vocal organs.

The elementary symbols represent the parts of the mouth employed in speech, and when a sectional drawing if the mouth is made, the outlines of the organs in such a drawing are used as symbols to represent the organs themselves. It is the pictorial basis that gave rise to the name "Visible Speech." The symbol for the under lip, for example, is the outline of the under lip in such a drawing; so with the point of the tongue, etc.

Like the telephone, the discovery of Professor Bell's son Alexander Graham Bell, it is so broad in principle as to be above nationality, and can be used to show in visible form the construction not only of speech, but every sound perceptible to the human ear which is within the compass of the human voice; so that those who are accustomed to its use can reproduce the sounds represented without ever having heard them. The accuracy with which this is accomplished is limited only by the ability of a transcriber to catch each inflection of a sound and properly to note it; and the correctness with which the sound is reproduced depends solely on the proficiency of the reader, and the control he has over his vocal organs. It is thus possible by its use to represent every sound made by a human being, whether English, French, or Hottentot. That it has not long ago taken its rightful place among the great public utilities of the age, is due in large part to the fact that it was given freely to the world. Had it been covered by patents, as was the telephone, its use might have been forced on the notice of the community long ago by persons pecuniarily interested in exploiting it.

A new era in the history of "Visible Speech" is, however, now opening, Dr. Alexander Graham Bell having given his father's estate for the purpose of spreading the use of the alphabet by the publication of books written in its symbols, and the training of persons whose profession it shall be to teach its use in public schools.

It may be added that the great merit of this alphabet have been long appreciated by that most progressive of nations, the Japanese, many books having been published in its Japanese form.

One of the special claims made for it by its inventor was that it was "adapted to the telegraphing of all languages without translation." For further information, application should be made to Hon. John Hitz, superintendent Volta Bureau, Volta Place and 35th Street, Washington, D. C. M. G. BELL.

WASHINGTON, D. C., December, 1907.

QUESTION BOX.

541 LEXINGTON AVE., NEW YORK, N. Y.,
February 13, 1908.

MY DEAR DR. BELL: I wish to call your attention to the Visible Speech phonogram for *ch*, sometimes ʊΩ and sometimes ΩΩ. You note the faulty sound given by the deaf children. The phonogram should be simply Ω (topshut). There is no *sh* in it, as may be demonstrated by the following, nor *t* either. Catch the point of your tongue on your lower teeth and you can still make the *ch*. If you protrude your tongue, you can still make a sound *like ch;* but the most conclusive demonstration is the pharyngeal exercise. If you emit no breath, *sh* is *inaudible*, but *ch* (tsh) is quite audible.

If this is proved, would it not be better in a new edition of "Visible Speech in Twelve Lessons," to have ʊΩ and ʊΩ supplanted by Ω and Ω, in accordance with "Principles of Speech," page 278?

Very truly yours,
(Signed) THOS. F. CUMMINGS.

1331 CONNECTICUT AVENUE, WASHINGTON, D. C.,
February 19, 1908.

MR. THOMAS F. CUMMINGS,
Lexington Avenue, New York, N. Y.

DEAR MR. CUMMINGS: Your suggestion to supplant ʊΩ by Ω is an interesting one, and worthy of consideration. The symbol Ω, however, like those for other shut consonants, represents a silent position of the vocal organs, no sound at all being produced until the succeeding position is assumed when the pharyngeal puff characteristic of the relinquishment of a shut position is heard mingling with the sound proper of the succeeding position.

If the characteristic puff of Ω is all there is in *tsh*, then your contention would be correct, and Ωɪ would be a correct representation of the

word (chew). I am inclined to think, however, that there is a real transitional effect which cannot be ignored, a sort of consonantal glide, between the shut position and the succeeding vowel. For example: (too) is quite distinct to my ear from (chew) even when pronounced and .

The difficulty experienced in obtaining a correct pronunciation of *tsh* from deaf children certainly seems to indicate that there is something wrong in the teacher's conception of the action of the vocal organs, and I am glad you have called attention to the matter.

I am inclined to think that the *sh* in such combinations should be considered as a mere transitional glide rather than a fixed position, and that the prolongation of the *sh* sound by the deaf child constitutes the unnatural effect noticed in his pronunciation. (See "Mechanism of Speech," page 97.)

It might perhaps be worth while considering the advisability of indicating a consonantal glide by a consonant symbol written on a small scale, just as we now indicate a vowel glide by a small vowel symbol.

Consonantal *r* and *y* occupy a very similar position to *sh* in this, that they become mere transitional glides after shut consonants; and the prolongation of these sounds under such circumstances by deaf children creates unnatural effects. Such words as (chew), (true), and (cue) might perhaps be written , , and .

While it is true that "if you emit no breath *sh* is inaudible, but *ch* (tsh) is quite audible," it does not follow that the *sh* part can be ignored in symbolizing the effect. It is equally true that, if you emit no breath, vowels by themselves are inaudible, whereas a vowel following a shut consonant is quite audible. The pharyngeal puff accompanying the relinquishment of the shut position, passing through the vowel configuration of the mouth, itself acquires vowel quality, so that under such circumstances the vowel becomes audible. The word (too), for example, is quite audible without any emission of air from the lungs and is quite distinct to the ear from the word (tea). In such cases of course it would never do to omit the symbol for the vowel position in symbolizing the effect; and in the case of *tsh* I am inclined to think that the *sh* position should also be indicated—at least in a subordinate manner. Yours sincerely,

(Signed) ALEXANDER GRAHAM BELL.

ꝺꝛɐɥ ı ɥʇǝ ɟǝ ɥɔɐɹ ɐɯɐ ɹǝʇ

ʇɐɥ ʇ,ɐɥ ɹǝʌǝ ɯɐ ɹǝʇ ɐ ɟo

ɯɐ ɹǝʇ ɐ ɟo ɯɐɹɟ ɹǝʌǝ ɯɐ ɹǝʇ

[EDITOR'S NOTE.—*This story of My Dog Ponto is taken from a volume of stories belonging to Dr. Alexander Graham Bell. They were set into the symbols probably by members of his Normal Class in Boston University. The writers of both the original story and the Visible Speech version are unknown, but the pronunciation seems to indicate that the Visible Speech writer was an American, and probably a Bostonian.*

The story is supposed to be told by a little boy, Ponto's master, and is written in simple language. It tells of tricks taught the dog, of the good times the two had together, and ends with an exciting adventure in which both participated.]

-ɔlʃa ɯl ɐlɔmɛlo ɑɯl ɑɟmɔɒ ɑɹjɛɯf ɯfɛ jo ɑɯl ɹɛɯlƐ
ɐlɔɑɯlo ʍɑʎlɯ ɹɛɟɛ jo ɯɟɔɑ[ɟɑ ɹɯlƐl ɹɯɓ ɬɬɛɑɟɒ
ɯɟɒɔ ɬɛ ɯɑl <ɒɟɔ ɑɬɒ jo ɛʃ ʎlɯɟɒɔ ɑɬɒ ɹ
ɑɹjɯ ʎlɯ[ɯɓɹɯ ɟl ɔʃɯ ɟl ɯɹɛɯɑɬɒ ɟɛ ɟo ɔɟɯ ɟl ɒʃɐɛ ɑɬɛ
ɑɯl ɒɔlɒ ʃo> <ɔʃ ʍɔlɒ ɑɯl ɑlɔɑɯɬɒ ɑlo ɟl ɑlɔ ɹ-ʃɑɬɛ ɒʃɐɯɹ ɛɯʃɑ
ɑɯl ɯɔɬɒ ʃo ɑɟ ɯɟɬɛ ɑɯl ɑlɔɑɯɬɒ ɑlo ɟl ɑlɔ ɹ-ʃɑɬɛ ɒʃɐɯɹ ɛɯʃɑ

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ἀπὸ τοῦ ἑνὸς ἄκρου τῆς ἐπιφανείας ἕως τοῦ ἄλλου ἄκρου ἐν εὐθείᾳ γραμμῇ διὰ τοῦ κέντρου τῆς σφαίρας ἀγομένη ἡ μεγίστη τῶν ἐν τῇ σφαίρᾳ εὐθειῶν ἐστιν ἡ διάμετρος τῆς σφαίρας καὶ ἡ μεγίστη τῶν ἐν τῷ κύκλῳ εὐθειῶν ἐστιν ἡ διάμετρος τοῦ κύκλου καὶ ἡ μεγίστη τῶν ἐν τῷ ἐπιπέδῳ τῆς ἐπιφανείας εὐθειῶν ἐστιν ἡ διάμετρος τοῦ ἐπιπέδου

ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων τῶν ἐν τῇ ἐπιφανείᾳ τῆς σφαίρας ἐπὶ τὸ αὐτὸ μέρος κοινὴν τομὴν ἐχόντων ἐπιπέδων ἡ μεγίστη τομὴ ἐστὶν ἡ διὰ τοῦ κέντρου τῆς σφαίρας γραφομένη· καὶ ἡ μεγίστη τῶν ἐν τῷ ἐπιπέδῳ τῆς ἐπιφανείας εὐθειῶν ἐστιν ἡ διάμετρος τῆς τομῆς

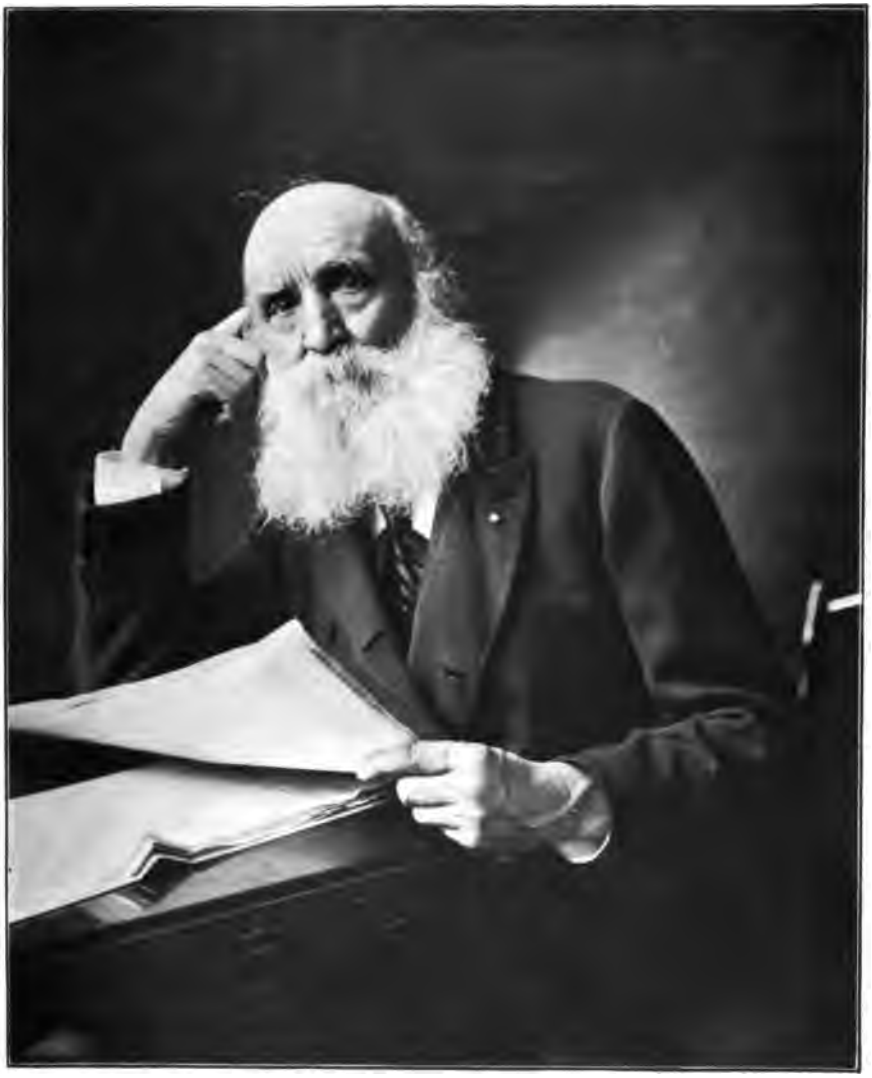
JOHN HITZ.

As we are about to go to press the news comes of the death of our friend, the Hon. John Hitz, for so many years the honored Superintendent of the Volta Bureau. We can hardly yet realize that we shall no more see that benign face among us, or feel the warm clasp of his hand. Though eighty years had passed over his head, they rested lightly on him, and the years seemed to make so little change that we hoped he might remain with us for many more. But he knew that his summons might come at any time, and he was ready. The end came as surely as he could have wished it, in the company of one so dear to him as Helen Keller. She had just arrived in the station on her way North from Alabama with her mother, and Mr. Hitz had the happiness of meeting and greeting her, and of a few minutes chat in the German they both loved. They then walked down the platform alone together, arm in arm as usual, when he spelled the words, "Ich muss langsam gehen" (I must go slowly), into her hand, and immediately after those ahead saw something was wrong. Heart failure had suddenly set in. All that could be done was done, but he died before the ambulance conveying him reached the hospital, where Helen Keller and her mother awaited him.

He was carried to the Volta Bureau, his home for many years. Here he lay, serene and peaceful among the flowers he loved so well, the flag of Switzerland at his head, his son, his son's wife, and the two manly young sons of his beloved daughter, Mrs. Burton, grouped about him, when on Sunday, March 29, the great doors of the Volta Bureau swung open to admit the relatives and friends who came to say a last goodbye to the beautiful and saintlike old man. They filled to overflowing the large hall of the Bureau, many standing without in the rain, and all showing the deep love they bore him. The services of the Swedenborgian Church to which he belonged, were read by the gray-haired pastor, Dr. Frank Sewall; there was singing by the church choir, and an address in German by the Swiss Minister, Dr. Leo Vogel. One could not but feel again that all was as he would have wished.

He was buried next day in the Congressional Cemetery, where, at his own desire, there will be erected a simple head-stone inscribed with his name, and the names of his parents and grandparents and the daughters so dear to him.

Our loss is too fresh upon us for further words at this time, but later we shall have more to say of his useful life and work.



John Muir

EDITORIAL COMMENT.

THE QUESTION OF THE REPUBLICATION OF "THE RAINDROP."

As will be recalled by those who read the report of the proceedings of the last Board meeting as published in our last issue, the General Secretary of the Association was directed to make inquiry as to what could be done looking to securing the republication of "The Raindrop," a volume of stories prepared and printed many years ago at the Western Pennsylvania Institution, and which has proven probably the most popular volume for reading ever placed in the hands of deaf children. The book has been out of print for some years, and old copies are counted almost of priceless value by those fortunate enough to own them. Its republication has been several times urged, and in various quarters, and it would seem only a matter of ways and means, the meeting of probably the universal desire of the profession upon the question. In accordance with the directions of the Board, the writer took up the matter in correspondence with Mr. James H. Logan, of Pittsburgh, principal at the time of the Western Pennsylvania Institution, who was chiefly instrumental in bringing out the original publication, and to whom all rights in it belong. As will be seen, in the following letter from Mr. Logan, he has very generously given his consent to the republication of the work, and he gives information also relative to the original publication that will serve all interested as a basis for calculating the expense of a new edition:

226 OBSERVATORY AVE., NORTH SIDE,
PITTSBURGH, PA., February 28, 1908.

F. W. BOOTH, ESQ.,
Gen. Secretary American Association to Promote the Teaching of Speech to the Deaf, Washington, D. C.

DEAR SIR: Your favor of 25th inst. received, and I thank you and the Board for kind expressions of appreciation of the "Raindrop."

I would be delighted to have a new edition printed, but am in no shape to attempt it myself. The original edition was 2,000 copies, and cost me a little over $1,400. It might be done cheaper now. I did all at my own expense so as to be entirely untrammeled in working out the idea.

There is no use trying publishers; they are in business to make money for themselves only. I tried them long ago. Copies were sent to Harper and Brothers, and their "Young People" came out soon after.

Those who publish works of this kind to help the deaf must be content to lose money. The work is, however, of the greatest practical utility to the deaf, and the reward must be looked for in this. Looked at in this light, results accomplished should be considered a full and sufficient return for all money spent.

I may never be able to attempt the role of publisher again; but hope some time to have leisure to write one or two more volumes on the same plan. The manuscript for one volume has been partly finished. Unfortunately, business and some duties that cannot be neglected leave neither time nor strength to continue such work.

When planning the original the idea was that when others had a practical demonstration of what could be done in this line they would enter the field and the deaf then have an ample supply of suitable reading. This is, of course, only the foundation.

It appears to me that your Board might secure sufficient funds to print an edition of 2,000 or 3,000 copies, to be supplied to the schools at or near cost. I will gladly consent to this, and ask no compensation on a reprint of the old "Raindrop." The magazine form may be discarded, but no changes or alterations made save only in the correction of errors.

It is my belief that your Board can do great and lasting good by providing a publication fund for such works. Just think how happy the children will be! With good wishes,

Yours very truly,

JAMES H. LOGAN.

From a second letter from Mr. Logan, drawn out by inquiries submitted to him, we take the following extracts:

It was my original intention to have the "Raindrop" well illustrated. Cassell, Routledge, and other publishers had very attractive plates which could have been used. The extra work and expense barred them out. Completing the work as it was, used up all the time and strength available. I certainly shall be delighted to see pictures in a new edition, for they add another charm for readers.

The subscription price for one year, or 12 numbers, was $1.00. The bound volumes sold at $1.50 each. Cover and binding cost, I think, in the neighborhood of 30 cents or more.

Your plan of getting subscriptions in advance for a new edition is good.

A publication fund would, I believe, be self-perpetuating. A given edition having been sold, the money would be back again to use on some other work. We need a center from which all books of real utility for the deaf can be procured. Rival schools could all work in harmony on this. JAMES H. LOGAN.

The original volume contains 384 pages, printed in solid pica, the printed page being 6 by 8½ inches. We have ascertained that the work can be reproduced at a cost perhaps a trifle less than the amount named by Mr. Logan as expended by him, illustrations in limited number being added and the number of pages being increased to make space for them.

The question now recurs, what can be done further in the matter? What do our schools want done, and what will the schools themselves do? It has been suggested that the subscription plan be adopted, that schools and individuals subscribe for the number of volumes that they are willing to take at a given maximum price. Mr. Logan gives his approval of this plan, and it would seem one altogether businesslike and practical. We should be very glad if the question might be taken up and discussed by the Institution papers and by individuals who may care to give their views by letter, to the end that a consensus of opinion may be had of all interested in the project, and that finally the wisest action shall be taken.

F. W. B.

THE VOLTA BUREAU EXHIBIT AT THE JAMESTOWN EXPOSITION.

That the Volta Bureau exhibit in the Social Economy Building at the Jamestown Exposition attracted a good deal of notice is evident in the fact that the visitors' book shows more than 2,000 names recorded. The Bureau by its practice of making an exhibit at expositions undoubtedly works to large advantage in carrying out its fundamental purpose, namely, "the increase and diffusion of knowledge relating to the deaf," and there is no telling the good it has accomplished by this means in all the years of its history, during which the practice has been consistently maintained. The correspondence of the Bureau, as we have been informed, shows scores of instances where its exhibit has brought to people in special need of it their first knowledge of the existence and work of schools for the deaf and of other philanthropic and social work carried on in behalf of the class. So it is not at all improbable that there are today hundreds of deaf children in our schools, and other hundreds of educated deaf who have passed through them, who have come to their heritage of education through the good offices of the Volta Bureau as exercised thus at great expositions, as also in the line of its regular and continuous work. F. W. B.

THE NORTHAMPTON SUMMER SCHOOL AND THE NORMAL TRAINING CLASS, BOTH TO BE CONTINUED.

Word has been received from Miss Yale that, at a meeting of the Corporators of Clarke School it was decided, after considering the resolutions of the Association Board passed at the recent New York meeting, to continue both the work of the Summer School and of the Normal Class during the present year. Thus the Normal Class is assured for the term of 1908-1909, and the Summer School for the coming June-July session of a month, covering the period from June 5 to July 2 inclusive. Further information regarding the Summer School or the Normal Class may be obtained by addressing Miss Caroline A. Yale at Clarke School, Northampton, Mass.

THE PROPOSED NEW YORK CITY DAY-SCHOOL FOR THE DEAF TO OPEN IN THE FALL.

Information comes of the prospective opening of the new Day-School for the Deaf in New York City the coming fall, at the time of the regular opening of the public schools in September. The information is accompanied by a request for teachers who have been trained in Northampton methods. The salary offered is $800 to begin with, with an annual increase of $100 until the full salary of $1,500 is reached. Credit will be given for experience, so that experienced teachers will start upon more than $800. Teachers generally will be interested to know of the pension system that prevails in New York City, the benefits of which will inure to teachers in the new Day-School. The system provides that a pension of half pay shall be paid to teachers who have taught thirty years, provided that twenty years of the time have been passed in the New York City schools. A pro rata pension is also granted teachers who become physically or mentally disabled after twenty years of service. That is, for twenty years two-thirds of the regular or full pension is granted. The Board of Examiners of the Board of Education, located at 500 Park Avenue, New York City, will forward application blanks to all candidates for positions in the new school, and when a date has been set the candidates will be called before the Board for examination. The principal of the school is Miss Margaret A. Regan, with present address, Public School 107, 272 West 10th Street, New York. F. W. B.

THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF AT OGDEN, UTAH.

As has been before announced, the Convention of American Instructors of the Deaf will meet the coming summer at Ogden, Utah, opening on Saturday, July 4, and continuing into the following week. Mr. Driggs writes us encouragingly of the prospects of a good attendance, and furnishes the following information relative to railroad rates from eastern points:

"I have today received the following information from the railroad people: The same tourists' rates will be made from eastern points to Ogden as were in effect last year; that is, commencing with June 1st and daily throughout the summer, excursion tickets will be sold from Omaha and Kansas City at a rate of $30.50; from St. Louis $38.00, and from Chicago $43.00. These tickets have stop-over privileges and are good returning until October 31st. The railroad people will make a rate of $61.50 from Ogden to the Yellowstone Park and return, including stage fare and hotel accommodations, for their five-day trip via the Mammoth Hot Springs, and a rate of $54.00 covering their four-day trip in the Park. They believe that in the majority of cases it will be to the advantage of persons desiring to visit the Yellowstone to purchase 'Yellowstone tickets' from starting point and stop over at Ogden for the Convention."

With regard to the program of the Convention, Mr. Driggs gives out the following in his school paper:

"The Governor of Utah will be with us, as will also the Superintendent of Public Instruction of our State. Then we shall have a lecture from Dr. Henry Suzzallo, of Columbia University, another lecture from Dr. Wm. G. Anderson, of Yale. We are planning to have daily class demonstrations of our methods and work for the benefit of the visiting teachers. Dr. Argo expects to be here with Miss Barry and a class of oral pupils, to give us a broader view of the 'Five Slate System.' These are in addition to the usual programme of papers and discussions."

DEAF CHILDREN BROUGHT BEFORE THE NATIONAL CONGRESS OF MOTHERS.

The National Congress of Mothers, meeting in Washington for a ten days' conference upon questions relating to motherhood and childhood, gave one of its sessions, on the morning of March 14, to the work of the "Education of the Deaf," the programme being in charge of Miss Mary S. Garrett, principal of the Home for the

Training in Speech of Deaf Children before they are of school age, Philadelphia. Papers were given on the following subjects: "A Consideration of the Welfare of Deaf Children and the Duty of the Medical Profession," by Charles S. Turnbull, M. D., of Philadelphia; "Extension of Opportunities for Early Training in Speech and Language for Deaf Children," by Hon. J. B. Showalter, of Pennsylvania; "Helps and Hindrances in Acquiring Speech and Language at the Proper Age," by Miss Mary S. Garrett. Miss Garrett's paper was illustrated by exercises by four deaf children of her school, ranging in age from three to twelve years, which elicited warm applause by the large audience present. A paper was also read upon the subject, "Backward and Deficient Children," by Dr. E. A. Farrington, Director of the Department of Experimental Psychology, Bancroft Cox School, Haddenfield, N. J. F. W. B.

"THE EDUCATIONAL PRESS ASSOCIATION OF AMERICA."

It was the editor's privilege and pleasure to meet with the members of the above-named Association, at its annual session, held in Washington, during the recent winter meeting of the Department of Superintendents of the N. E. A. This Press Association is an organization within the N. E. A., with its membership embracing representatives of the various educational journals of the country. The organization is fully officered, and from reports read and discussions had, we could not but feel impressed that the Association is an active as well as efficient agency for the advancement of educational journalism and of the various interests held in common by its membership. Our application for membership in the organization on behalf of the ASSOCIATION REVIEW was received and favorably acted upon, and henceforth the REVIEW will, as representing educational effort in our own special field, come into and maintain affiliation with all the best and most influential publications active in the promotion of the interests of normal educational work. We may indulge the hope that this affiliation may prove mutually beneficial, but especially beneficial to the REVIEW and to deaf education, which it represents, in bringing the latter more directly and more frequently to the attention of the educator-journalists of the land, and winning for it more generally their intelligent and interested support. One condition of membership is that each publication shall exchange

with all the others in the Association, a condition that will be complied with by the REVIEW most willingly. The following is a complete roster of the publications constituting the Association at this time:

American Education, Albany, N. Y.; American Journal of Education, Milwaukee, Wis.; American Primary Teacher, Boston, Mass.; American School Board Journal, Milwaukee, Wis.; Arkansas School Journal, Little Rock, Ark.; Association Review, Washington, D. C.; Canadian Teacher, Toronto, Can.; Colorado School Journal, Denver, Colo.; Educator-Journal, Indianapolis, Ind.; Florida School Exponent, Gainesville, Fla.; Journal of Education, Boston, Mass.; Kindergarten-Primary Magazine, N. Y. City; Louisiana School Review, New Orleans, La.; Moderator-Topics, Lansing, Mich.; Missouri School Journal, Jefferson City, Mo.; Midland Schools, Des Moines, Iowa; Mississippi School Journal, Oxford, Miss.; Nebraska Teacher, Lincoln, Nebr.; North Carolina Journal of Education, Durham, N. C.; Ohio Educational Monthly, Columbus, Ohio; Ohio Teacher, Athens, Ohio; Pennsylvania School Journal, Lancaster, Pa.; Popular Educator, Boston, Mass.; Primary Education, Boston, Mass.; School and Home Education, Bloomington, Ill.; School Bulletin, Syracuse, N. Y.; School Education, Minneapolis, Minn.; School Journal, New York, N. Y.; School News, Taylorville, Ill.; School Science and Mathematics, Chicago, Ill.; Southern School Journal, Lexington, Ky.; Texas School Journal, Dallas, Tex.; Texas School Magazine, Dallas, Tex.; Western School Journal, Topeka, Kans.; Western Teacher, Milwaukee, Wis.; Wisconsin Journal of Education, Madison, Wis.

PROFESSOR FERRERI APPOINTED TO THE RECTORSHIP OF THE MILAN SCHOOL FOR THE DEAF.

The pleasing intelligence comes of the appointment of Prof. G. Ferreri to the Rectorship, or Superintendency, of the Institution for the Deaf and the Normal School attached to it, at Milan, Italy. We feel assured that all Professor Ferreri's many American friends unite with us in congratulations, not only to him, but also to the school which is to have the advantages coming to it from his large experience in the work of deaf education and his wide acquaintance with it in various countries of the world. F. W. B.

WANTED, a position in a school for the Deaf as instructor in sloyd—Russian and Swedish systems taught—by a man experienced in Institution work. Address, Sloyd Teacher, care of the editor of the REVIEW.

THE DISCRIMINATION AGAINST THE DEAF IN THE CIVIL SERVICE.

A recent ruling of the Civil Service Commission excluding the Deaf from the examinations for positions in the Civil Service of the National Government, has aroused the Deaf and their friends throughout the country to concerted effort to secure a rescinding of the ruling and a restoration of the rights formerly enjoyed by the Deaf to employment under the Government. For our own part we can not but feel that the ruling is an unjust one, as there can be no issue upon the fundamental question of the ability of deaf men and women to perform certain classes of services for which deafness in no degree or way unfits them. No man can do everything; every man is limited in his capacities, and by his limitations—by them, not by rulings—he is excluded from numerous and sundry positions in the service; each person, therefore, finds his place where, and only where, his special limitations form no bar to efficiency in the performance of the special work to which he is appointed. All that the Deaf ask is that the same door of opportunity shall be open to them, open in the same way and to the same extent, as to other citizens, and that their limitations, deafness with the rest, shall be considered to bar them only from entrance to those lines of service where they would operate to handicap efficiency in the labor performed. And the Deaf have asked this, and their friends have asked it, bringing every argument and influence at their command to bear to secure reversal of the obnoxious ruling. As yet the efforts put forth have been without avail, and the ruling stands. Whether or no it will ever be rescinded remains to be seen, but we are frank to say there seems little hope for it, for government is, in its last analysis and in its innermost workings, largely a matter of convenience, routine, and arbitrary choice on the part of its higher officials, and officialdom having made the ruling, and, against the strongest kind of pressure, confirmed it, it will be hard, if not impossible, to bring it at some future time even to the point of considering its reversal. Still it may be worth while to make the attempt.

As a matter of interest, as well as for purposes of historical record, we give below the final decision upon the question and the reasons therefor of the Commission, as sent out in reply to the appeal made to it by the officials of the National Association of the Deaf and others:

UNITED STATES CIVIL SERVICE COMMISSION,
WASHINGTON, D. C., March 4, 1908.

MR. GEORGE W. VEDITZ, *President,*
National Association of the Deaf, Colorado Springs, Colo.

SIR: At the direction of the President the Commission sends you herewith a copy of a letter addressed by this Commission to the President, under date of February 28, 1908, replying to various references to the Commission from the Executive Office of inquiries and requests relative to the exclusion of deaf-mutes from examinations; and a copy of the President's reply the following day. Particular attention is invited to the President's statement that he approves the action which the Commission therein states that it has taken in this matter.

By direction of the Commission:

Very respectfully,

JOHN C. BLACK, *President.*

COMMISSION'S LETTER TO THE PRESIDENT.

February 28, 1908.

THE PRESIDENT:

In letters of February 4, 5, 13, 14, and 20 you ask for reports upon letters from Representative Burleson, Dr. E. M. Gallaudet, Representative Hull, Senator Ankeny, and Representative Bede and others relative to the exclusion of deaf-mutes from the examinations.

In response we beg to report that at the outset, in 1883, deaf-mutes were admitted to the examinations, and, in a very few cases, received appointment. This practice continued until October 25, 1906, when the present regulation was adopted, which reads:

"The following defects will debar persons from any examination: Insanity, tuberculosis, paralysis, epilepsy, blindness, total deafness, . . ."

The reasons for changing the practice were that it was found, after years of observation, that relatively very few of these defective persons applied for examination, very few passed, and the Departments themselves desired to be relieved of the embarassment of considering persons for appointment to duties which such persons could not perform. In nearly every instance, when such disabled persons were certified they failed of appointment. This resulted in constant complaint from persons thus rejected as they regarded it as a grievance that, although they had passed the test for eligibility, they were rejected after having gone to the trouble and expense of examination.

The Departments alone can know the needs and conditions of the service and the decision of the question whether a deaf mute can be accepted to fill any particular vacancy must be left to the appointing officer, who alone knows the situation and who is responsible for the successful administration of his office. It would be inexcusable

for the Commission to continue to invite to examinations persons who must inevitably be rejected for appointment and thus to hold out to them hopes that cannot be realized. The Commission can neither create offices or vacancies; it cannot consider personal necessities, however great; it cannot be guided by sympathy; it performs but a plain duty in refusing to examine persons of whom only a very inconsiderable number can be accepted for appointment.

In the Departments at Washington out of more than twenty-five thousand employés only about twenty-eight are known as deaf-mutes. Seventeen were brought in by classification and only eight were appointed through examination, although for twenty-three years the examinations were open to them.

It is very disagreeable to sustain objections on account of physical defects in cases of men who have lost arms, legs, hearing or vision; or who are afflicted with disorders which threaten infection to their fellow-workers. The Commission does not wish to be thought arbitrary in doing so or to have it thought that it was putting a stigma to be thus barred from examination. The Commission sincerely sympathizes with such persons and deems it but kindness that they should not be put to the trouble and expense of a process which would break the word of promise and lead to misunderstanding and disappointment in their ultimate relentless rejection for appointment.

It is obvious that it would be a mere loss of time, if not a kind of fraud, to examine persons who could not, even if successful, be accepted in the public service. We have the honor to be,

Very respectfully,

(Signed) JOHN C. BLACK,
HENRY F. GREENE,
JOHN A. MCILHENNY,
Commissioners.

THE PRESIDENT'S APPROVAL.

THE WHITE HOUSE,
WASHINGTON, February 29, 1908.

TO THE CIVIL SERVICE COMMISSION:

For the reasons set forth in your letter to me of February 28th as regards deaf-mutes, I approve the action you therein state you have taken, and direct that copies of this correspondence be forwarded to the petitioners in the matter.

(Signed) THEODORE ROOSEVELT.

Copies of "The Mechanism of Speech," by Alexander Graham Bell (second edition, with Synopsis and Index added), on sale at $1.20 per copy. Address orders to F. W. Booth, General Secretary, 1525 35th St., N. W., Washington, D. C.

MISS KENT'S MANUAL OF PRIMARY ARITHMETIC.

We have been requested to give place to the following announcement, which, in view of its purport, we are very glad to do: "The publication of a Manual of Primary Arithmetic for use in schools for the Deaf, by Miss Eliza Kent, has been delayed. The book will probably be issued next month." Many of our readers will remember the demonstration by Miss Kent of her arithmetic method before the summer meeting of the Association at Edgewood Park, and they will be gratified to know that the method is to have this publication in form for general use in the schools of the country.

DR. BELL HAS ALWAYS DEPRECATED LEGISLATIVE INTERFERENCE WITH MARRIAGES OF THE DEAF.

1331 CONNECTICUT AVE., WASHINGTON, D. C.,
JANUARY 20, 1908.

MR. J. L. SMITH, Faribault, Minn.

DEAR SIR: Your note of January 18 received, in which you say:

> "At the Convention of the National Association of the Deaf, held at Norfolk last summer, a formal and unanimous protest was registered against the action of the Committee on Eugenics, of the National Conference of Charities and Correction in including the Deaf among the classes whom it is proposed to bar by legislation from contracting matrimony. The President of the Association was instructed to appoint a committee to confer with the Committee on Eugenics, with a view to securing the omission of the Deaf from the list of objectionable classes. As Chairman of the Committee thus appointed, I therefore address this communication to you and to your colleagues."

This is all news to me, and contains the first information that a Committee on Eugenics of the National Conference of Charities and Correction has been appointed. I know nothing about it, and am not its Chairman. You have evidently made some error in the personnel of the Committee. You better look the matter up to find the name of the proper person to whom to address your communication.

You have probably gained the idea that I was connected with the movement from the fact that the newspapers announced last year that a Committee on Eugenics had been appointed by the "*American Breeders' Association,*" and that I had been appointed Chairman of it. This was true so far as it went, but the newspapers failed to report the fact that I had declined the appointment.

Last November the proposed Committee was reorganized with Dr. David Starr Jordan as Chairman. I have signified my willingness to serve on the Committee, but not as Chairman. If you wish to send any communication to this Committee, address President David Starr Jordan, Chairman of the Com-

mittee on Eugenics of the American Breeders' Association, Leland Stanford University, California.

In order that you may know my attitude towards the subject of your communication, I may say that I have always deprecated legislative interference with the marriages of the Deaf.

Yours sincerely,

(Signed) ALEXANDER GRAHAM BELL.

CORRESPONDENCE BETWEEN DR. J. L. SMITH AND DR. DAVID STARR JORDAN.

Dr. DAVID STARR JORDAN, *Chairman Committee on Eugenics, Leland Stanford University, California.*

DEAR SIR: Some time ago the press dispatches stated that the committee of which you are chairman had decided to propose legislation forbidding the intermarriage of the deaf along with that of certain other classes.

This report has aroused intense feeling among the deaf as a class. At the convention of the National Association of the Deaf, held at Norfolk last July, a committee was appointed to confer with your committee in the matter. As chairman of that committee, I should like to know, before proceeding further, if the press report is true, and if the Committee on Eugenics has taken, or intends to take, any action looking to the inclusion of the deaf among undesirable classes whom it is proposed to bar from matrimonial alliances.

Yours respectfully,

J. L. SMITH.

Faribault, Minn., Jan. 25, 1908.

OFFICE OF THE PRESIDENT,
LELAND STANFORD JUNIOR UNIVERSITY,
STANFORD UNIVERSITY, CAL., January 29, 1908.

Mr. J. L. SMITH, *Faribault, Minn.*

DEAR SIR: The Committee on Eugenics has not recommended and has never thought of recommending the prohibition of the intermarriage of the deaf. If deafness has been caused by accident or disease it is not in any degree inheritable. For people born absolutely deaf there is the likelihood of its having an hereditary tendency, but this is a matter in which the people interested are concerned, and not a subject, I think, for statute.

I had never heard of the matter to which you refer until Mr. Alexander G. Bell, one of the committee, wrote that he had received letters criticising him for making such a proposition. Neither he, nor I, nor any member of the Committee on Eugenics is responsible for it. I am told that the idea originated with some committee on charities.

Very truly yours,

DAVID STARR JORDAN, President.

WANTED, for the school year of 1908-9, a teacher of intermediate grades. One preferred who has also had experience in primary grades. Address, John D. Wright, 1 Mt. Morris Park, West, New York City.

OBITUARY.

J. MOERDER.

General J. Moerder died in St. Petersburg, Russia, December 10, 1907. General Moerder was privy counselor in the government and president of the Institute Curatelle Maria-Feodorowna, one of the leading schools for the Deaf in Russia. He was a reader of foreign publications relating to the Deaf, among them the ASSOCIATION REVIEW, he being an active member of our Association.

NATHAN FRANK WHIPPLE.

On Wednesday evening, February 12, 1908, Mr. Nathan Frank Whipple, an oral teacher in the California Institution at Berkeley, dropped dead while officiating in his accustomed capacity as reader in the Christian Science Church, Oakland. Mr. Whipple had recently been suffering from an attack of grip, and this had probably weakened his heart. Mr. Whipple was a cousin of Zera Whipple, a teacher of the deaf, the founder of the Mystic (Conn.) Oral School, and the inventor of the Whipple Natural Alphabet, which was described by Miss Daisy Way at the first Lake George Summer Meeting of the Association. (See, for her paper and illustrations of this Natural Alphabet, the Report of the First Summer Meeting.) Mr. Whipple began teaching the deaf at the age of thirty years, at the Mystic School, and entered the California Institution in 1886, where he continued his work until his death, at the age of fifty-nine years. The following resolutions of appreciation were adopted by his fellow teachers of the California Institution:

WHEREAS, The death of Mr. Whipple has removed from among us a valued colaborer and an esteemed friend, and

WHEREAS, We desire to express to his family our sympathy in this trying hour, therefore be it

Resolved, That in the death of Mr. Whipple this Institution and the profession of deaf-mute instruction at large have lost a teacher of rare success and ability and a man of high and noble character.

Resolved, That a copy of these resolutions be presented to his family and printed in the Annals, the ASSOCIATION REVIEW, and the California News.

L. MOFFAT,
R. S. FRENCH,
WM. A. CALDWELL,
Committee.

VOLTA BUREAU.

1331 CONNECTICUT AVENUE,
WASHINGTON, D. C., March 25, 1908.

MR. F. W. BOOTH,
1525 35th Street N. W., Washington, D. C.

DEAR MR. BOOTH: The sudden death of Mr. Hitz is, of course, as great a shock to you as it is to me. It is necessary that there should be some one to represent the Volta Bureau in the present emergency, and on behalf of the Trustees allow me to request you to act as Acting Superintendent of the Volta Bureau for the present.

Mr. Howes will co-operate with you in every way.

Yours sincerely,
(Signed) ALEXANDER GRAHAM BELL.

1525 THIRTY-FIFTH STREET,
WASHINGTON, D. C., March 26, 1908.

DR. ALEXANDER GRAHAM BELL,
1331 Connecticut Ave., Washington, D. C.

DEAR DR. BELL: Your letter of the 25th inst., conveying your request, on behalf of the Trustees of the Volta Bureau, that, in the present emergency attending the death of Mr. Hitz, I act as Acting Superintendent for the present, is duly acknowledged.

Appreciating your trust, I accept the appointment, and await the further instructions of the Trustees.

With deepest feelings of regret that death has removed our beloved friend from the scenes of his labors, and with the assurance that the great work that he has accomplished for the increase and diffusion of knowledge relating to the deaf shall be and remain for him his enduring monument, I am,

Very sincerely yours,
F. W. BOOTH.

THE FEAR OF THE WRITTEN WORD.

Our readers we feel assured will be interested in the scholarly paper given in this number under the above caption. As is known, the extent to which written language should be used in early instruction by the oral method, is a burning question in continental European schools, and Mr. de Vries reflects, no doubt very generally, the views of those who would make use of written language in the early years of instruction, not as a substitute for speech, but to supplement and fortify it. It should be said that here in America, this question has scarcely, if at all, reached the controversial stage, and it may never do so, for, generally speaking, even in our strictly oral schools, there is, as there has always been, a large tolerance of the written word, introduced *after* a certain familiarity with the spoken

word has been established, particularly as read upon the lips. But the argument of the paper will excite thought among our teachers, which in itself will lead undoubtedly to a more exact valuing and placing, on their part, of the written word in relation to the several aims of instruction. F. W. B.

CALL FOR THE ANNUAL MEETING OF THE ASSOCIATION.

TO THE MEMBERS OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF:

The Eighteenth Annual Meeting of the American Association to Promote the Teaching of Speech to the Deaf will be held at Rochester, New York, on Wednesday, May 6, 1908, at 10 o'clock a. m., at the Western New York Institution for the Deaf.

The special business will be the election of five Directors to serve three years, in place of the retiring Directors whose term of office expires in 1908, viz., Z. F. Westervelt, Sarah Fuller, E. McK. Goodwin, E. A. Gruver, and Mrs. W. B. Weeden. In accordance with a provision of the constitution nominations for the office of Director must be made in writing, and received by the President and Secretary thirty (30) days before the date of the annual meeting. Only active members—or those whose dues are paid for the current year—and life members may vote at this election.

No literary program will be presented at this meeting, and only formal business matters, including reports of officers and committees, will be considered.

For further particulars address Dr. Z. F. Westervelt, Secretary, Institution for the Deaf, Rochester, N. Y.

A. L. E. CROUTER,
President of the American Association to Promote the Teaching of Speech to the Deaf, Mt. Airy, Philadelphia, Pa.

Signed:
Z. F. WESTERVELT, *Secretary.*

SPEECH AND VOICE TRAINING FOR TEACHERS OF THE DEAF.

Mrs. Sarah Jordan Monro, special teacher of speech and the use of the voice in the Horace Mann School for the Deaf, in Boston, will open her summer class for a four weeks' course of instruction, on the first day of July next. For prospectus, address Mrs. S. J. Monro, Room 518, Pierce Building, Copley Sq., Boston, Mass.

Tongue manipulators, used by articulation teachers, for sale. Price, 40 cents each. Address the General Secretary.

Reprints in pamphlet form of "My List of Homophenous Words" (words that look alike on the lips), by Emma Snow, may be obtained through the office of the General Secretary. Price for single copies, 25 cents.

Teachers wishing positions and Superintendents wishing teachers may avail themselves of the office of the General Secretary of the American Association to Promote the Teaching of Speech to the Deaf, so far as it may be of service to them. The General Secretary aims to keep a list of teachers, and one of Superintendents, belonging to the above classes, ready for use by any person who may write for them.

THE ASSOCIATION REVIEW is a publication of the American Association to Promote the Teaching of Speech to the Deaf. It is sent free to Active Members of the Association. Active membership is obtained upon payment to the Treasurer of the membership fee of two dollars ($2), or its equivalent in foreign currency—8s. 4d. in English money; 8m. 2pfg. in German money; 10fr. 2c. in French money; 7 kr. 50 ore. in Norwegian, Swedish, and Danish money; and 10l. 2c. in Italian money. Postal money orders should be drawn on Washington, D. C., in favor of F. W. Booth.

BLANK FORM FOR APPLICATION FOR ACTIVE MEMBERSHIP IN THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

_____ _____ _____ ____*1908.*

To F. W. BOOTH, Gen. Sec'y and Treas.,
1525 Thirty-fifth Street N. W., Washington, D. C.:

I hereby make application for Active Membership in the American Association to Promote the Teaching of Speech to the Deaf for the year 1908.

Enclosed please find $2.00 for the year's dues.

Signed, _____

Address, _____

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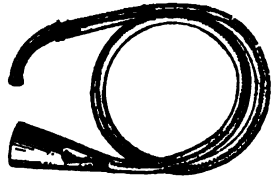

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Circular of Information, No. 1, "The Word Method," by David Greenberger $0.25

Circular of Information, No. 2, "The Lyon Phonetic Manual," by Edmund Lyon ..... .25

Circular of Information, No. 3, "The Whipple Natural Alphabet," by Miss Daisy M. Way..... .10

Report of the First Summer Meeting held at Lake George..... .60

Containing—Lectures, by Dr. A. Hewson, on "Anatomy of the Chest," "The Lungs, Trachea, and Larynx," "Anatomy of the Pharynx, and Mouth"; by Hon. Gardiner G. Hubbard, on "History of the Education of the Deaf"; by Dr. Alexander Graham Bell, on "The Throax and Larynx," "The Pharynx and Mouth in their Relation to Speech," "The Functions of the Epiglottis and Soft Palate," "Visible Speech as Taught to the Deaf," "Consonants," "Vowels, Glides, and Combinations," "Speech Reading"; by Miss Caroline A. Yale, on "History and Development of Articulation Teaching in America," "Methods of Articulation Teaching in Clarke Institution—Early Work," same subject "Later Work," by Miss Rebecca E. Sparrow; by Miss Sarah Fuller, on "How Helen Keller was Taught," "Infant Schools for the Deaf," "Articulation Teaching in the Primary Classes of the Horace Mann School"; by Dr. A. L. E. Crouter, on "History of Oral Work in the Pennsylvania Institution"; by Dr. Z. F. Westervelt, on "Speech in a Manual Alphabet School"; by Paul Binner, on "Harmonics of the Voice." Papers, by Miss Daisy Way, on "The Whipple Natural Alphabet," by Miss Elsa L. Hobart, on "Plan to Encourage Speech," by Miss Ida H. Adams, on "The Blackboard as an Aid in the Use of Spoken Language." School of Practice Work. Answers to Questions in the Question Box. Discussions of various papers.

Report of the Second Summer Meeting held at Lake George..... .40

Containing—Lectures, Addresses, and Papers: by Dr. Alexander Graham Bell, on "Report on Articulation Teaching in America"; by Miss Harriet E. Hamilton, on "Speech-Reading in the Rochester School"; by Mr. David Greene, on "How We Breathe," "How We Speak," "How We Teach Deaf Children to Speak"; by Dr. Harrison Allen, on "Errors of the Muscles of the Parts Used in Speech," "The Tongue"; by Dr. A. Hewson, on "The Anatomy nad Physiology of the Ear"—illustrated, "The Anatomy and Physiology of the Palate, Pharynx, and Tongue"—illustrated, "Physiology of Hearing"; by Mr. S. G. Davidson, on "Reading: its Influence upon the Language and Speech of the Deaf"; by Mr. J. A. Gillespie, on "Aural Instruction"; by Miss Caroline A. Yale, on "How can We best Fit Ourselves to Teach Speech to the Deaf"; by Mr. Edmund Lyon, on "Phonetics"; by Dr. E. M. Gallaudet, on "What Constitutes Success in Oral Teaching?" School of Practice Work. Answers to Questions in the Question Box. Discussions of various papers.

No Report of the Third Summer Meeting, held at Chicago during the World's Fair, was published, there being no literary program presented at that meeting.

(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

Report of the Fourth Summer Meeting, held at Chautauqua (issued in sections):

FIRST SECTION—"Reports from Abroad," by Hon. John Hitz; "Oral Method in German Schools," by Miss J. L. Russell..... $0.10

SECOND SECTION—"Helen Keller: A Psychological Study," by Rev. J. T. McFarland, D. D..... .10

THIRD SECTION—"Further Contributions to the Study of that Subtile Art which may Inable One with an Observant Eie to Heare what Any Man Speaks by the Moving of the Lips," by Mrs. Alexander Graham Bell; "The Teaching of Speech-Reading to Adults," by Miss Susan E. Bliss; "Speech-Reading," by Miss Mabel Ellery Adams ..... .20

FOURTH SECTION—"Experiences in Lip-Reading," by Mr. S. G. Davidson; "Experiences of a Speech-Reader," by Mrs. Sylvia C. Balis; "My Experience in Public Schools," by Mrs. L. M. Sanders..... .20

FIFTH SECTION—"The Work in General History and Literature in the Northampton School," by Miss Katherine Fletcher; "Oral Work Preparatory to Instruction in Geography," by Mrs. M. L. Smith ..... .10

SIXTH SECTION—"The Disadvantages of Private Instruction," by J. D. Wright; "Words and Language," by Dr. T. A. Humason..... .10

SEVENTH SECTION—"Manual Alphabets in an Oral School," by Miss Harriet E. Hamilton; "The Importance of the Kindergarten Methods in the Teaching of the Deaf," by Miss Bertha H. Gault... .10

EIGHTH SECTION—"Progress in Amelioration of Certain Forms of Deafness and Impaired Hearing," by Dr. J. C. Gordon..... .10

NINTH SECTION—"Abnormalities of the Upper Respiratory Tract and Ear, Found Commonly Among Deaf-Mutes," by Arthur Ames Bliss, A. M., M. D..... .10

TENTH SECTION—"Emma Garrett's Methods," by Miss Mary S. Garrett; "Auricular Instruction in the Nebraska School," by Mr. W. E. Taylor; "The Word Method," by Miss Kate F. Hobart; "The Element Method," by Mr. E. S. Thompson..... .10

ELEVENTH SECTION—"Improvement and Development of the Hearing," by Lillie Edgerton Warren; "The Higher Instruction of the Deaf," by Mr. J. D. Kirkhuff; "Articulation Teaching in the Wisconsin School for the Deaf," by Miss Almira I. Hobart..... .10

TWELFTH SECTION—"The Teaching of Speech in the Hartford School," by Miss Adelia C. Fay; "The History of Articulation Teaching in the New York Institution for the Instruction of the Deaf and Dumb," by Enoch Henry Currier, M. A..... .10

(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

THIRTEENTH SECTION—Miss Sullivan's Paper on Helen Keller..... $0.10

FOURTEENTH SECTION—Opening Exercises..... .10

Report of the Fifth Summer Meeting, held at Mt. Airy..... .40

Containing—Addresses, Lectures, and Papers: by Dr. Philip G. Gillett, on "Some Notable Benefactors of the Deaf"; by Miss Harriet B. Rogers, on "Early Experiences in Teaching the Deaf to Speak"; by M. Magnat, "Historical Sketch of the Teaching of Deaf-Mutes in France"; by Dr. Thomas Arnold, on "Fundamental Differences between Sound and Touch as Languages"; by Miss Emma L. Plympton, on "Manipulation in Articulation"; by Miss Kate F. Hobart, on "Learning to Talk—First Year Work"; by Miss Mabel E. Adams, on "Learning to Talk—Second Year Work"; by Miss Ida H. Adams, on "Learning to Talk—Third Year Work"; by Mr. Weston Jenkins, on "Primary Language in Manual Training"; by Miss Elsie M. Steinke, on "School Room Decoration"; by Miss Josephine Lackore, on "Observations on Oral Methods of Instruction"; by Miss Anna C. Allen, on "Geography Teaching—Theories that have Stood the Test of the Class-Room"; by Mr. F. W. Booth, on "Primary Arithmetic for Deaf Children"; by Mr. S. G. Davidson, on "Advanced Work in Language and Literature with Oral Classes"; by Miss Katherine Fletcher, on "Text-Books in History"; by Dr. A. L. E. Crouter, on "Shall the Deaf Seek Higher Instruction in Schools for the Hearing?"; by Dr. Thomas A. Humason, on "The Essential Factor in Mental Development"; by Miss Helen Keller, on "The Value of Speech to the Deaf"; by Dr. Harrison Allen, on "Some Further Observations on the Study of Adenoid Growth in Connection with Deaf-Mutism"—illustrated, "A study of the Motions of the Soft Palate"—illustrated; by Dr. Lightner Witmer, on "Experimental Studies of Mental Content and the Processes of Thinking"; by Mr. Harris Taylor, on "Child Study"; by Mr. W. E. Taylor, on "Beginnings in Aural and Oral Training"; by Mr. J. A. Gillespie, on "Report of Auricular Instruction in American Institutions"—statistical; "Reports on Oral Instruction in American Schools."

Report of the Sixth Summer Meeting, held at Northampton, (issued in successive numbers of THE ASSOCIATION REVIEW):

THE ASSOCIATION REVIEW, Vol. I, No. 1..... .25

Containing—"The Association Magazine," by F. W. Booth; "The Teacher and the State," by John M. Tyler; "University Experiences," by A. Lincoln Fechheimer; "Kindergarten Work in Schools for the Deaf," by Edward C. Rider; "Pictures and How to Use Them," by Florence C. McDowell; "Gardiner Greene Hubbard," by Gertrude M. Hubbard; "Address of the President," by Alexander Graham Bell.

THE ASSOCIATION REVIEW, Vol. I, No. 2..... .25

Containing—"The Relation of Language Teaching to Mental Development and of Speech to Language Teaching," by S. G. Davidson; "Pictures in the School Room," by Margaret J. Stevenson; "The Reinforcement of Speech by Writing," by Mabel Ellery Adams.

(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

THE ASSOCIATION REVIEW, Vol. II, No. 1..... $0.25

Containing—"Postulates and Laws of Pedagogy," by W. A. Clark; "The Use and Abuse of Memory in Education," by Weston Jenkins; "Rhythm as an Aid to Voice Training," by Sarah Allen Jordan; "Historical Notes Concerning the Teaching of Speech to the Deaf," Chapters I and II, by Alexander Graham Bell.

THE ASSOCIATION REVIEW, Vol. II, No. 2..... .25

Containing—"Some New Phases of Modern Educational Thought," by Thomas M. Balliett; "The Walls of our School Rooms," by Cora R. Price; "Historical Notes Concerning the Teaching of Speech to the Deaf," Chapter III, by Alexander Graham Bell.

THE ASSOCIATION REVIEW, Vol. II, No. 3..... .25

Containing—"The Meaning of Nature Study," by Arthur C. Boyden; "Voice Culture," by Anna C. Allen; "Historical Notes Concerning the Teaching of Speech to the Deaf," Chapter IV, by Alexander Graham Bell.

THE ASSOCIATION REVIEW, Vol. II, No. 4..... .25

Containing—"A Few Books," by Katharine Fletcher; "Historical Notes Concerning the Teaching of Speech to the Deaf," Chapter V, by Alexander Graham Bell.

THE ASSOCIATION REVIEW, Vol. II, No. 5..... .25

Containing—"How to Correct Defective Articulation," by Ella Scott; "Historical Notes Concerning the Teaching of Speech to the Deaf," Chapter VI, by Alexander Graham Bell.

Report of the Seventh Summer Meeting, held at Edgewood Park, (issued as the February–April, 1907, number of THE ASSOCIATION REVIEW) ..... .50

Containing—"The Real Purpose of Nature Study," by Samuel G. Schmucker; "Sunday Occupations for Younger Pupils," by Bessie N. Leonard; "Sunday School Work for Intermediate Grades," by Edwin G. Hurd; "Sunday School Work for Advanced Grades," by James A. Weaver; "The Moral Training of the Young," by Samuel C. Schmucker; "The First Years of the Child's Life in the Institution," by Emma Ross Thompson; "Primary Language Work," by Anna C. Hurd; "Speech and Speech Reading in Primary Classes," by Frances L. Glenn; "Primary Work in Arithmetic," by Eliza Kent; "Address of the President," by A. L. E. Crouter; "Defective Vision in School Children," by G. E. Curry; "Lectures upon Visible Speech," by Caroline A. Yale; "Geography and History for Intermediate Grades," by Frances W. Gawith; "Chart Stories," by Caroline A. Yale; "Language Work in Intermediate Grades," by Susan E. Bliss; "Articulation in the Intermediate Grades," by Frances Wettstein; "School Sanitation and Hygiene,"

(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

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THE ASSOCIATION REVIEW

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FRANK W. BOOTH, EDITOR

June, 1908

The Real Romance of the Telephone, or Why Deaf Children in America Need no Longer be Dumb, XXVIII - FRED DE LAND 233

Special Report upon the Deaf, Based on the Returns of the Twelfth Census—Continued - ALEXANDER GRAHAM BELL 240

In Memoriam: John Hitz - - - - FRANK SEWALL 256; LEO VOGEL 257; HELEN KELLER 259

John Hitz as I Knew Him - - - - - - HELEN KELLER 260

Language and Language Teaching in German Schools - - - - - - - - - HUGO HOFFMANN 265

The Great Extension of the Manual Method in Europe in the last Century due to Emperor Joseph II - JOSEF SCHARA 272

Helps and Hindrances of Deaf Children in Acquiring Speech and Language at the Natural Age - - MARY S. GARRETT 274

Laddie - - - - - - - - - ANNA C. REINHARDT 277

The Sign-Language in American Schools - OLOF HANSEN 282

Report on Visits to American and British Schools SAMUEL JOHNSON 283

Program of the Eighteenth Convention of American Instructors of the Deaf - - - - - - - - - J. W. JONES 288

Statistics of Speech Teaching in American Schools for the Deaf - 290

[illegible] - - - - - 303

What the Melville Bell Symbols Mean to Me - - - - - MRS. ALEXANDER GRAHAM BELL 308

Institution Press - - - - - - - - - - - - 325

Editorial Comment - - - - - - - - - - - 329

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JUNE, 1908.

THE REAL ROMANCE OF THE TELEPHONE, OR WHY DEAF CHILDREN IN AMERICA NEED NO LONGER BE DUMB.[1]

BY FRED DE LAND.

CHAPTER XXVII.

PREPARING THE PATENT SPECIFICATIONS.

The summer and autumn of 1875, was the most critical period in Graham Bell's life. Overwork and anxiety were breaking down his health, he was not only practically penniless, but had received and expended on his experiments the payment for lectures not yet delivered; yet he never lost faith in the greatness of his conception and the value his invention would ultimately be to mankind, notwithstanding the many discouraging assurances from eminent electricians and scientists, that while his admirable theory was perfect, it was extremely improbable that it would ever materialize into operative form. Intuitively he felt that the problem of speech transmission would ultimately be solved along the lines he was working, if not by himself, then by someone else, and he felt this so strongly that he would not give up striving to win the prize, though the struggle not only emptied his purse but was rapidly depleting his vitality. Referring to this period, Graham Bell said:

"In July, 1875, I resided in Salem, where I gave instructions for two or three hours a day to the little deaf pupil of whom I have before spoken. In the early part of that month I went to Boston every day, the journey occupying about one hour. I remained at my rooms in the Boston University for one hour or more according as I had pupils or not, and I devoted the remainder of my time within working hours to my electrical experi-

[1] Commenced in the October, 1905, number.

ments. After six o'clock in the evening, after Mr. Williams' workshop closed, I either returned to Salem or received private pupils at my rooms in the Boston University. During the latter part of the month my visits became irregular on account of ill-health, and I only made the journey for the sake of carrying on my experiments, my professional work having failed me. About the end of July, the experiments were suspended on account of the illness of Mr. Watson, (typhoid fever), and when he had recovered I was in no condition to resume work. By about the commencement of August, my health had completely broken down, and during that month I rarely left Salem, excepting for an occasional visit to Mr. Hubbard's house in Cambridge. I made no experiments during this month, but occupied my time in thinking and pondering over the experiments that had been made in the preceding months. About the end of August or the first of September, I left Salem for my father's house in Canada....

"I went to Canada chiefly for the sake of my health. I spent a great portion of the time in the open air, taking plenty of horse-back exercise. I had no means of making electrical experiments, but I attempted, as I found strength and inclination, to reduce to writing my ideas concerning the production and utilization of undulatory currents for the purposes of the speaking-telephone and the multiple telegraph. I also occupied a portion of my time in trying to interest friends in my inventions. I hoped to make some pecuniary arrangement for my support in Boston, so that upon my return to that city I might devote all my time to my electrical researches. It was my intention to patent what I had done at once, in the United States and abroad, and I thought that in return for an interest in my foreign patents I could induce some friend to make the arrangement I desired, and to undertake all the expenses of the foreign application. Before I left Canada I had arrived at an understanding of this kind with the late Hon. George Brown, of Toronto, and his brother Mr. Gordon Brown.

"Immediately upon my return to Salem in October, 1875, I prepared the specification for my patent of March 7, 1876, so as to be ready to make application for letters-patent in the United States and abroad, the moment a definite arrangement should be concluded with Mr. George Brown and his brother. Mr. George Brown had specially requested me to take no steps in America

that could be prejudicial to the patents he proposed to take out abroad. I therefore waited anxiously for the definite reply to my proposition that had been promised, *but it never came.* In the meantime my time was occupied for two or three hours a day as before, with the instruction of my deaf pupil in Salem. Not hearing from Mr. George Brown I was soon placed in a serious dilemma. There seemed to be no alternative but to give up either my profession or my electrical experiments. I *could* not give up my profession and I *would* not give up my experiments. In regard to my professional work I was bound to deliver lectures in the Boston University, for which I had already received the payment, and the income from which had already been spent in supporting myself while carrying on my electrical researches. My little deaf pupil was my only means of support, and my instruction to him necessarily occupied a very considerable portion of my time, quite independently of the time required to travel backwards and forwards between Boston and Salem. In regard to my electrical work I could, of course, have made some arrangements with Mr. Sanders and Mr. Hubbard for my support while carrying on researches, but for the reasons already given I decided not to do so. There was another reason that powerfully influenced my decision at this time, namely: That I looked forward to the possibility of marriage. I knew from the past that if I attended properly to my profession it would be capable of yielding me an honorable support. On the other hand, I believed so firmly in the pecuniary value of my inventions that I was willing, and had offered, to risk everything by throwing professional work aside and devoting myself exclusively to the improvement of my apparatus if only Mr. Brown had acceded to my proposition....

"It was my belief that if the pecuniary arrangement I desired could be concluded with Mr. George Brown and his brother, that I could have repaid Prof. Monroe the money I had borrowed from him, and have been released from my obligation to lecture in the Boston University, for Prof. Monroe was not only a very dear personal friend, but was dean of the faculty to which I belonged. He knew something of my experiments and ideas, was interested in them, and would undoubtedly have done what he could to oblige me. Under existing circumstances, it was absolutely impossible for me to get along without attending to my profession; and it was difficult to see how I could do this without

giving up my experiments. On the other hand I felt that even had I desired to do so, I was bound in honor to Mr. Sanders and Mr. Hubbard to put my inventions to practical commercial use, so that they might be remunerated for the money they had already expended upon them.

"It will be understood then that in October, 1875, I was placed in a serious dilemma. I expected from day to day to hear from Mr. George Brown, and while waiting I occupied myself in writing and rewriting my specifications. I felt that I had made a great invention, that I had invented what is now known as the speaking telephone. I tried to embody this in my specification, and to express it in language that should be scientifically accurate and complete, and to the best of my ability I did so. I did not know much about the patent laws of the country, but believed that the counsel who might be employed by Mr. George Brown and his brother, or by Mr. Sanders and Mr. Hubbard, would make the necessary alterations in the phraseology, if any such alterations were deemed necessary. Mr. Hubbard and Mr. Sanders were very anxious to have my specification filed at once in the United States Patent Office, but I believed the invention to be so important and so valuable that I wanted it to be taken out abroad as well as in America, and, therefore, delayed the filing, hoping to hear from Mr. George Brown and his brother.

"Towards the end of October, 1875, when I began to despair of hearing from Mr. Brown, I was called upon to face the problem—What should I do?—and I came to the conclusion that the quickest way to get back to my electrical experiments was to devote my attention exclusively for a time to my professional work, and I formulated a plan which I thought would soon permit me to devote a very considerable portion of my time to the electrical researches, and yet allow me to hold my profession together as a contingent support for the future.

"My experiments in teaching articulation to the deaf had aroused a deep interest all over the country among those interested in the education of this class, and there was a great demand for teachers who were practically acquainted with my methods of instruction. It seemed to me that if this demand were to be made known it might enable me to form a large normal class of persons desiring to become articulation teachers, and that after a short time these persons would be competent themselves to teach. It would then be possible for me to relinquish

into their hands the instruction of individual pupils, and thus allow me to devote the time that would otherwise be spent in this class of work, to the prosecution of my electrical researches, and to the improvement of the speaking telephone, so as to bring it into general commercial use.

"About the end of October (1875), or the commencement of November, I commenced to carry this plan into practical effect by lecturing at various Normal Schools upon the subject of articulation teaching; and some time in the early part of November I succeeded in gathering together a large normal class. I found the work involved a great deal more than I had expected. I had very few private pupils by whose instruction I could exemplify my methods of teaching, and I was, therefore, obliged to open a free class for the adult deaf-mutes of the city of Boston, which met in the evenings at my rooms in the Boston University. I addressed the different deaf-mute societies at some of their meetings, urging upon the members the advisability of their taking this opportunity, probably the only opportunity that would ever occur to them, of acquiring the art of speech. In response to my appeal quite a number of deaf-mutes made their appearance. I made a number of attempts, during November and December, to carry out my experimental work, but my private pupils began to increase in number, and I found that the work of organizing and arranging my classes and private pupils, according to the plan I have stated above, involved such an expenditure of time and such an amount of personal labor that it was not until somewhere about the middle of February, 1876, that I was enabled to carry out the plan in its entirety.

"Towards the end of November the expostulations of Mr. Hubbard and Mr. Sanders had their effect; we would no longer wait for Mr. Brown. In the early part of December Mr. Hubbard took my specification to Washington to have it submitted to his counsel there; but at my earnest request he promised that no steps should be taken in the United States Patent Office, until I had a last chance to interest friends in Canada, so as to have my foreign patents taken out simultaneously with my American patent. On account of the nature of my engagements this opportunity would not arrive until the Christmas vacation.

"In the meantime, as I have stated above, it was my intention to make another attempt during the Christmas vacation, to

interest friends in Canada to take out foreign patents. I accordingly left Salem for Canada on or about the 24th of December, and returned about the first of January, having in the meantime concluded a definite agreement with Mr. George Brown and his brother. I could not, at that time, ask them for a cash payment sufficient to support me, as I was then carrying out the organization of my professional work in the manner stated above. I asked them, however, and they agreed to make me a sufficient allowance to pay the rent of special rooms in which the experiments might be carried on."

Referring to this period, Mr. Hubbard testified in 1879: "Nothing was heard from Mr. Brown for some time, and I was greatly annoyed at this delay in applying for the American patents, and finally offered to furnish the money for the foreign patents simply for the purpose of having our own patents applied for, intending to charge the expense to the American patents. taking no interest in the foreign one, as I did not believe any foreign patent would pay me for looking after it. Mr. Bell was unwilling to be under any pecuniary obligation to me, as he was then hoping to become my son-in-law, and finally promised that, if he could not obtain the money in any other way, he would borrow the money of his father.... I saw the specification of the speaking telephone in October, 1875. I believe it was substantially like the one for which the letters-patent were issued, though several changes were made in it, subsequent to my first seeing it. I believe I took it with me to Washington, in the first of December, 1875; I showed it to Mr. Pollock, brought it back with me on leaving Washington, December 14 or 15, then took it with me on my return to Washington, which was, I think, on the 10th of January, 1876, showed it again to Mr. Pollock, then I returned it to Mr. Bell for his signature and oath...." (In returning the specification to Graham Bell, Mr. Hubbard wrote: "I have been over your specification with Mr. Pollock. He is very much pleased with it, and says he thinks it will require no attention.") "It was signed and sworn to in Boston, on January 20, 1876."

Mr. Hubbard gave the following reasons why the application was not immediately filed in the Patent Office: "I met Mr. Bell in New York about January 25, at his request to meet Mr. George Brown of Toronto. We met Mr. Brown and he agreed to take out letters-patent in Great Britain. Mr. Bell gave me his

copy of the specification, which I was to take under a promise, which he exacted from me, that it should not be filed at Washington until Mr. Brown should have filed it in England. He did not hear from Mr. Brown as he expected, and finally wrote to me that if he did not hear by a certain day, that I might file it. I strenuously objected to the least delay, but it was of no avail, as he wished to have it taken out in his native country, that he might there have the benefit of what he believed a great invention."

As already stated, Graham Bell began to prepare an application for a patent in September or October, 1875. In composing the specification he "wrote and rewrote it a number of times, finally adopting that mode of expression which seemed to him the best to explain his invention and the relation which one portion bore to another." In December, 1875, it was submitted to his patent attorneys in Washington, was returned to him and again sent to Washington; then it was returned and signed and sworn to in Boston, on January 20, 1876; and "the part which describes and claims the speaking-telephone has never had a word altered since, either by change in the paper before filing or amendments afterwards." Then the application was "immediately returned to the attorneys. Afterwards Attorney Pollock met Graham Bell in New York, and the application was again gone over with care by the two together. No change whatever was made in it at that time and Pollock took it back with him to Washington."

(*To be continued.*)

SPECIAL REPORT UPON THE DEAF, BASED ON THE RETURNS OF THE TWELFTH CENSUS.[1]

PREPARED BY ALEXANDER GRAHAM BELL, AS EXPERT SPECIAL AGENT OF THE CENSUS OFFICE.

(*Continued from page 145.*)

Deaf relatives.—Out of a total of 89,287 deaf, 29,716, or 33.3 per cent, had deaf relatives; 50,765, or 56.8 per cent, had not; and in 8,806, or 9.9 per cent, the question relating to deaf relatives remained unanswered (Table 3[2]). It thus appears that one-third of the deaf population of the United States have other members of their families deaf.

Where only one member of a family is deaf, there is nothing to indicate any inherited predisposition toward deafness in the individual considered; sporadic deafness may be purely adventitious and accidental. But where two or more members of the same family are deaf, it is a little less likely that the deafness is accidental. It is more probable that in many, if not in most, cases heredity has played a part in the production of the deafness; in which case we should look up to the common ancestor of the deaf persons for the initiating cause.

Where a tendency toward ear trouble exists in a family, it may lie dormant and unsuspected until some serious illness attacks a member of the family, when the weak spot is revealed and deafness is produced. We are not all built like that wonderful one-horse shay that was so perfectly made in all its parts that when at last it broke down it crumbled into dust. When an accident occurs, it is the weak part that gives way, and it would be incorrect to attribute the damage to the accident alone and ignore the weakness of the part; both undoubtedly are contributing causes.

In the case, then, of a deaf person who has deaf relatives the assigned cause of deafness may not be the only cause involved, or in-

[1] A reprint of "Special Reports: the Blind and the Deaf," in the part relating to the Deaf; issued by the Department of Commerce and Labor, Bureau of the Census, Washington, 1906. Commenced in the October, 1906, number of the REVIEW.

[2] Omitted from this republication.

deed the true cause at all. It may be the cause simply in the same sense that the pulling of a trigger is the cause of the expulsion of a bullet from a rifle, or a spark the cause of the explosion of a gunpowder magazine; hereditary influences may be involved.

In considering the subject of deaf relatives it seems advisable to distinguish blood relatives from persons who are relatives simply by marriage; and relatives in the direct line, from collateral or distant relatives.

In the present report four kinds of deaf relatives are distinguished, which for convenience of reference are designated by the letters *a, b, c,* and *d: a,* brothers, sisters, or ancestors (direct line); *b,* uncles, aunts, cousins, and other relatives not *a, c,* or *d* (collateral); *c,* sons or daughters (descendants); *d,* husbands or wives (relatives by marriage).

The attempt to distinguish blood relatives from persons who are relatives by marriage only has not been entirely successful, for many of the uncles and aunts contained in the *b* class may be relatives by marriage alone.

Some of the deaf have *a* relatives, others have *b* relatives, etc., and still others have both *a* and *b* relatives, as well, perhaps, as relatives belonging to the *c* and *d* classes. It therefore becomes necessary to effect a classification of deaf relatives so as to distinguish in the tables the various combinations; for it is obvious that if (without some special arrangement or understanding in this matter) we should add together the totals having *a, b, c,* or *d* relatives, the summation would exceed the aggregate. For example, the total number reported as having deaf relatives is 29,716 (Table 3). Of these, 21,660 had *a* relatives deaf, 8,308 had *b* relatives deaf, 677 had *c* relatives deaf, and 5,051 had *d* relatives deaf. The summation is 35,696, which exceeds the aggregate by 5,980. This, of course, results from the fact that some of those having *a* relatives had also *b* or *c* or *d* relatives, etc. In former censuses, in which deaf relatives were divided into smaller groups and more of them, the discrepancy between the summation and the aggregate was so great as to render it exceedingly difficult to draw broad conclusions from the statistics.

In the present report only four kinds of relatives are considered, giving the advantage of larger numbers with which to deal; and a plan of classification has been adopted which enables us to safely add the varieties together without duplication, thus facilitating researches relating to deaf relatives.

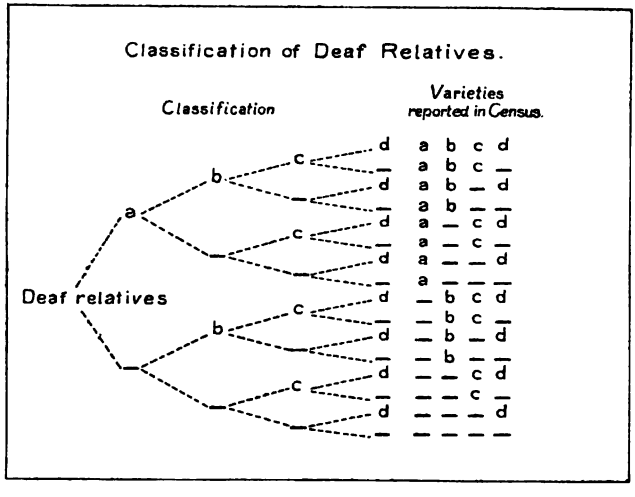
Classes.—In classifying deaf relatives we may begin by dividing the deaf into two classes—those who have *a* relatives and those who have not (Diagram 38).

Broad groups.—Each of these classes may then be divided into two broad groups (comparable to genera)—those who have *b* relatives and those who have not.

Subgroups.—Each of these groups may then be divided into two subgroups (comparable to species)—those who have *c* relatives and those who have not.

Varieties.—Each of these subgroups may be still further subdivided into two varieties—those who have *d* relatives and those who have not.

DIAGRAM 38.



It will be noticed that the census returns include all possible combinations of *a, b, c,* and *d.* Diagram 38 exhibits the whole scheme of classification after the manner of a genealogical chart, with the combinations of *a, b, c,* and *d* relatives reported in the census arranged in accordance with the classification.

Tables XLIX and L relate to the deaf who have deaf relatives, arranging them into classes, broad groups, subgroups, and varieties in accordance with the classification.

Table XLIX shows the number of the deaf having deaf relatives of the specified classes, by period of life when deafness occurred, degree of deafness, sex, consanguinity of parents, and sex of the married deaf, and is illustrated by Diagram 39.

Table L shows the number of the deaf having deaf relatives of the specified classes, by age or period of life when deafness occurred.

Broad classes.—The primary division is into two broad classes, "*a* relatives" and "no *a* relatives."

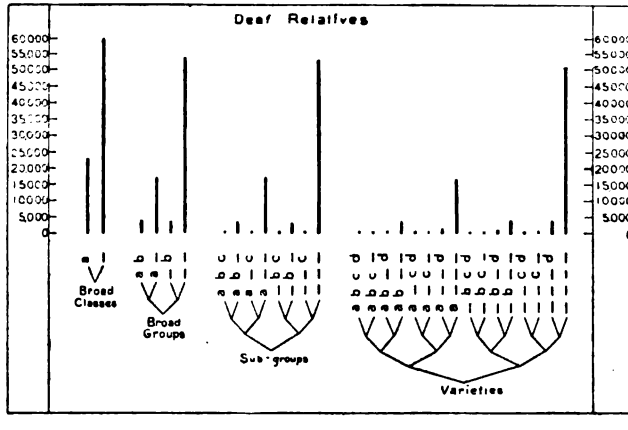
The first class (*a*) consists of deaf persons who have deaf brothers, sisters, or ancestors.

The second class (—) consists of those who have no deaf brothers, sisters, or ancestors.

a .....*a* relatives.
— .....No *a* relatives.

Broad groups.—Two divisions, "*a* or *b* relatives" and "no *a* or *b* relatives."

DIAGRAM 39.



The first division consists of deaf persons who have (*a*) deaf brothers, sisters, or ancestors; or (*b*) deaf uncles, aunts, cousins, or other more distant relatives (not *a*, *c*, or *d*).

The second division consists of (— —) those who have neither *a* nor *b* relatives.

a or *b* relatives:
a *b*.....both *a* and *b*.
a — .....*a* but not *b*.
-- *b*.... ...*b* but not *a*.
No *a* or *b* relatives:
— —.....neither *a* nor *b*.

Subgroups.—Two divisions, "*a*, *b*, or *c* relatives" and "no *a*, *b*, or *c* relatives."

L XLIX.—THE DEAF BY DEAF RELATIVES (*a*, *b*, *c*, OR *d*),[1] PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, CONSANGUINITY OF PARENTS, AND SEX OF MARRIED DEAF.

CLASS OF DEAF RELATIVES.	Total.	PERIOD OF LIFE WHEN DEAFNESS OCCURRED.			DEGREE OF DEAFNESS.		SEX.		CONSANGUINITY OF PARENTS.			THE MARRIED DEAF.		
		Childhood (under 20).	Adult life (20 and over).	Unknown.	Totally deaf.	Partially deaf.	Male.	Female.	Parents cousins.	Parents not cousins.	Not stated.	Total.	Male.	Female.
Total	89,287	50,296	35,924	3,067	37,426	51,861	46,915	42,372	4,065	75,530	9,692	34,206	19,746	14,460
Deaf relatives :														
Not stated	8,806	3,049	4,356	1,401	2,646	6,160	4,251	4,555	154	1,891	6,761	2,872	1,655	1,217
Stated	80,481	47,247	31,568	1,666	34,780	45,701	42,664	37,817	3,911	73,639	2,931	31,334	18,091	13,243
Stated :														
a relatives	21,660	11,783	9,520	357	8,170	13,490	10,669	10,991	1,850	18,838	972	9,308	5,027	4,281
No *a* relatives	58,821	35,464	22,048	1,309	26,610	32,211	31,995	26,826	2,061	54,801	1,959	22,026	13,064	8,962
a or *b* relatives	25,851	14,481	10,946	424	10,033	15,818	12,831	13,017	2,171	22,552	1,128	10,888	5,876	5,012
a *b*	4,117	2,352	1,704	61	1,499	2,618	1,947	2,170	412	3,587	118	1,764	919	845
a —	17,543	9,431	7,816	296	6,671	10,872	8,722	8,821	1,438	15,251	854	7,544	4,108	3,436
— *b*	4,191	2,698	1,426	67	1,863	2,328	2,165	2,026	321	3,714	156	1,580	849	731
No *a* or *b* relatives	54,630	32,766	20,622	1,242	24,747	29,883	29,830	24,800	1,740	51,087	1,803	20,446	12,215	8,231
a, *b*, or *c* relatives	26,221	14,614	11,167	440	10,152	16,069	13,011	13,210	2,181	22,879	1,161	11,116	6,009	5,107
a *b* *c*	71	42	29	.....	33	38	36	35	5	65	1	52	31	21
a *b* —	4,046	2,310	1,675	61	1,466	2,580	1,911	2,135	407	3,522	117	1,712	888	824
a — *c*	198	92	103	3	80	118	92	106	16	171	11	137	76	61
a — —	17,345	9,339	7,713	293	6,591	10,754	8,630	8,715	1,422	15,080	843	7,407	4,032	3,375
— *b* *c*	38	15	23	.....	14	24	14	24	.....	36	2	20	10	10
— *b* —	4,153	2,683	1,403	67	1,849	2,304	2,151	2,002	321	3,678	154	1,560	839	721
— — *c*	370	133	221	16	119	251	177	193	10	327	33	228	133	95
No *a*, *b*, or *c* relatives	54,260	32,633	20,401	1,226	24,628	29,632	29,653	24,607	1,730	50,760	1,770	20,218	12,082	8,136
a, *b*, *c*, or *d* relatives	29,716	17,681	11,523	512	13,039	16,677	14,771	14,945	2,285	26,088	1,343	14,558	7,750	6,808
a *b* *c* *d*	23	20	3	.....	20	3	16	7	3	19	1	23	16	7
a *b* *c* —	48	22	26	.....	13	35	20	28	2	46	.....	29	15	14
a *b* — *d*	221	201	16	4	185	36	111	110	24	187	10	219	110	109
a *b* — —	3,825	2,109	1,659	57	1,281	2,544	1,800	2,025	383	3,335	107	1,493	778	715
a — *c* *d*	54	51	2	1	48	6	26	28	8	43	3	53	25	28
a — *c* —	144	41	101	2	32	112	66	78	8	128	8	84	51	33
a — — *d*	930	829	88	13	766	164	453	477	111	775	44	914	450	464
a — — —	16,415	8,510	7,625	280	5,825	10,590	8,177	8,238	1,311	14,305	799	6,493	3,582	2,911
— *b* *c* *d*	8	8	.....	.....	7	1	2	6	.....	7	1	6	2	4
— *b* *c* —	30	7	23	.....	7	23	12	18	.....	29	1	14	8	6
— *b* — *d*	241	223	14	4	212	29	127	114	13	219	9	231	121	110
— *b* — —	3,912	2,460	1,389	63	1,637	2,275	2,024	1,888	308	3,459	145	1,329	718	611
— — *c* *d*	79	72	7	.....	66	13	37	42	2	72	5	77	36	41
— — *c* —	291	61	214	16	53	238	140	151	8	255	28	151	97	54
— — — *d*	1,495	3,067	356	72	2,887	608	1,760	1,735	104	3,209	182	3,442	1,741	1,701
No *a*, *b*, *c*, or *d* relatives	50,765	29,566	20,045	1,154	21,741	29,024	27,893	22,872	1,626	47,551	1,588	16,776	10,341	6,435

[1] Symbols employed—*a*, deaf brothers, sisters, or ancestors; *b*, deaf uncles, aunts, cousins, or other relatives not *a*, *c*, or *d*; *c*, deaf children (sons or daughters); *d*, deaf husbands or wives.

TABLE L.—THE DEAF BY DEAF RELATIVES (*a*, *b*, *c*, OR *d*),[1] AND AGE WHEN DEAFNESS OCCURRED.

CLASS OF DEAF RELATIVES.	Total.	AGE WHEN DEAFNESS OCCURRED.			AGE WHEN DEAFNESS OCCURRED.											
		Definitely stated.	Indefinitely stated.	Unknown.	Birth.	After birth, under 2.	2 and under 5.	Under 5.	5 and under 10.	10 and under 15.	15 and under 20.	Under 20.	20 and under 40.	40 and under 60.	60 and under 80.	80 and over.
Total.....	89,287	81,590	4,630	3,067	14,474	7,396	10,536	32,406	7,018	4,464	4,061	47,949	16,588	9,437	6,595	1,021
Deaf relatives :																
Not stated.....	8,506	6,199	1,206	1,401	1,044	298	485	1,827	367	262	218	2,674	1,201	966	1,141	217
Stated.....	80,481	75,391	3,424	1,666	13,430	7,098	10,051	30,579	6,651	4,202	3,843	45,275	15,387	8,471	5,454	804
Stated :																
a relatives.....	21,650	20,451	852	357	5,295	961	1,341	7,597	1,123	1,227	1,315	11,262	5,256	2,633	1,198	102
No *a* relatives.....	58,821	54,940	2,572	1,309	8,135	6,137	8,710	22,982	5,528	2,975	2,528	34,013	10,131	5,838	4,256	702
a or *b* relatives.....	25,851	24,411	1,016	424	6,116	1,378	1,873	9,367	1,451	1,457	1,569	13,844	6,111	3,003	1,340	113
a *b*.....	4,117	3,904	152	61	1,021	160	243	1,424	212	305	320	2,261	1,086	438	111	8
a —.....	17,543	16,547	700	296	4,274	801	1,098	6,173	911	922	995	9,001	4,170	2,195	1,097	94
— *b*.....	4,191	3,960	164	67	821	417	532	1,770	328	230	251	2,582	855	370	142	11
No *a* or *b* relatives.....	51,630	50,980	2,408	1,242	7,314	5,720	8,178	21,212	5,200	2,745	2,274	31,431	9,276	5,468	4,114	691
a, *b*, or *c* relatives.....	26,221	24,749	1,032	440	6,155	1,397	1,902	9,454	1,467	1,469	1,584	13,974	6,210	3,060	1 388	117
a *b* *c*.....	71	70	1	.....	16	3	3	22	5	3	11	41	20	9	.....	.....
a *b* —.....	4,046	3,834	151	61	1,005	157	240	1,402	207	302	309	2 220	1,066	429	111	8
a — *c*.....	198	190	5	3	52	5	7	64	9	9	10	92	61	26	11	.....
a — —.....	17,345	16,357	695	293	4,222	796	1,091	6,109	902	913	985	8,909	4,109	2,169	1,076	94
— *b* *c*.....	38	36	2	.....	4	1	3	8	2	3	1	14	10	8	4	.....
— *b* —.....	4,153	3,924	162	67	817	416	529	1,762	326	227	253	2,568	845	362	138	11
— — *c*.....	370	338	16	16	39	19	29	87	16	12	15	130	99	57	48	4
No *a*, *b*, or *c* relatives....	54,260	50,642	2,392	1,226	7,275	5,701	8,149	21,125	5,184	2,733	2,259	31,301	9,177	5,411	4,066	687
a, *b*, *c*, or *d* relatives.....	29,716	28,087	1,117	512	6,621	1,948	3,144	11,712	2, 51	1,606	1,626	16,995	6,311	3,161	1,494	126
a *b* *c* *d*.....	23	22	1	.....	12	3	3	18	1	.....	.....	19	3	.....	.....	.....
a *b* *c* —.....	48	48	.....	.....	4	.....	.....	4	4	3	11	22	17	9	.....	.....
a *b* — *d*.....	221	217	.....	4	122	27	28	177	17	5	2	201	11	4	1	.....
a *b* — —.....	3,825	3,617	151	57	883	130	212	1,225	190	297	307	2,019	1,055	425	110	8
a — *c* *d*.....	54	53	.....	1	37	4	4	45	4	1	1	51	2	.....	.....	.....
a — *c* —.....	141	137	5	2	15	1	3	19	5	8	9	41	59	26	11	.....
a — — *d*.....	930	889	28	13	468	87	157	712	73	15	6	806	36	28	18	1
a — — —.....	16,415	15 468	667	280	3,754	709	934	5,397	829	898	979	8,103	4,073	2,141	1,058	93
— *b* *c* *d*.....	8	8	.....	.....	3	1	3	7	1	.....	.....	8	.....	.....	.....	.....
— *b* *c* —.....	30	28	2	.....	1	.....	.....	1	1	3	1	6	10	8	4	.....
— *b* — *d*.....	241	233	4	4	50	48	75	173	36	10	1	220	6	3	4	.....
— *b* — —.....	3.912	3,691	158	63	767	368	454	1,589	290	217	252	2,348	839	359	134	11
— — *c* *d*.....	79	77	2	.....	25	16	21	62	5	2	1	70	5	1	1	.....
— — *c* —.....	291	261	14	16	14	3	8	25	11	10	14	60	94	56	47	4
— — — *d*.....	3.495	3,338	85	72	466	551	1,241	2,258	584	137	42	3,021	101	101	106	9
No *a*, *b*, *c*, or *d* relatives.	50,765	47,304	2,307	1,154	6,809	5,150	6,908	18,867	4,600	2,596	2,217	28,280	9,076	5,310	3,960	678

[1] Symbols employed—*a*, deaf brothers, sisters, or ancestors; *b*, deaf uncles, aunts, cousins, or other relatives not *a*, *c*, or *d*; *c*, deaf children (sons or daughters); *d*, deaf husbands or wives.

The first division consists of deaf persons who have (*a*) deaf brothers, sisters, or ancestors; (*b*) deaf uncles, aunts, cousins, or other more distant relatives (not *a*, *c*, or *d*); or (*c*) deaf children (sons or daughters).

The second division consists of (— — —) those who have neither *a*, *b*, nor *c* deaf relatives.

a, *b*, or *c* relatives:

a *b* *c*.....*a*, *b*, and *c*.
a *b* —.....*a* and *b* but not *c*.
a — *c*.....*a* and *c* but not *b*.
a — —.....*a* but not *b* or *c*.
— *b* *c*.....*b* and *c* but not *a*.
— *b* —.....*b* but not *a* or *c*.
— — *c*.....*c* but not *a* or *b*.

No *a*, *b*, or *c* relatives:

— — —.....neither *a*, *b*, nor *c*.

Varieties.—Two divisions, "*a*, *b*, *c*, or *d* relatives" and "no *a*, *b*, *c*, or *d* relatives."

The first division consists of deaf persons who have (*a*) deaf brothers, sisters, or ancestors; (*b*) deaf uncles, aunts, cousins, or other more distant relatives (not *a*, *c*, or *d*); (*c*) deaf children (sons or daughters); or (*d*) deaf husbands or wives.

The second division consists of (— — — —) those who have neither *a*, *b*, *c*, nor *d* deaf relatives.

a, *b*, *c*, or *d* relatives:

a *b* *c* *d*.....*a*, *b*, *c*, and *d*.
a *b* *c* — ....*a*, *b*, *c*, but not *d*.
a *b* — *d*.....*a*, *b*, *d*, but not *c*.
a *b* — —.....*a*, *b*, but not *c*, *d*.
a — *c* *d*.....*a*, *c*, *d*, but not *b*.
a — *c* —.....*a*, *c*, but not *b*, *d*.
a — — *d*.....*a*, *d*, but not *b*, *c*.
a — — —.....*a*, but not *b*, *c*, *d*.
— *b* *c* *d*.....*b*, *c*, *d*, but not *a*.
— *b* *c* —.....*b*, *c*, but not *a*, *d*.
— *b* — *d*.....*b*, *d*, but not *a*, *c*.
— *b* — —.....*b*, but not *a*, *c*, *d*.
— — *c* *d*.....*c*, *d*, but not *a*, *b*.
— — *c* —.....*c*, but not *a*, *b*, *d*.
— — — *d*.....*d*, but not *a*, *b*, *c*.

No *a*, *b*, *c*, or *d* relatives:

— — — —.....neither *a*, *b*, *c*, nor *d*.

The 16 varieties shown can be added together in any way that may be desired without duplication of the persons referred to.

As an illustration of the method of handling deaf relatives symbolically, take a case from Table XLIX.

Suppose we desire to ascertain the number of deaf persons reported to have deaf children; we simply add together all the varieties containing the letter *c* (the symbol for deaf sons or daughters). The summation of the varieties containing the letter *d* will give us the number having deaf husbands or wives. The varieties containing the combination *c d* will give us those who have both *c* and *d* relatives; and — *d* will give us *d* relatives without *c*.

ILLUSTRATION.

a b c d			*a b c d*
a b c —			*a b — d*
a — c d			*a — c d*
a — c —			*a — — d*
— b c d	*a b c d*	*a b — d*	*— b c d*
— b c —	*a — c d*	*a — — d*	*— b — d*
— — c d	*— b c d*	*— b — d*	*— — c d*
— — c —	*— — c d*	*— — — d*	*— — — d*
c	*c d*	*— d*	*d*

INTERPRETATION.

c...The total number having deaf children (sons or daughters).
c d...Number having deaf children and deaf husbands or wives.
— d...Number having deaf husbands or wives but not deaf children.
d...The total number having deaf husbands or wives.

The importance will be noted of (—), a positive sign for a negative fact; *d* means a different thing from — *d*.

a or b relatives.—From Table XLIX it appears that out of a total of 89,287 deaf persons 80,481 answered the questions relating to deaf relatives and 8,806 did not. The percentages given in Table LI are based upon the "stated cases."

Nearly one-third of the deaf, 32.1 per cent, are reported as having deaf relatives (*a* or *b*). That is, they had deaf brothers, sisters, ancestors, or deaf uncles, aunts, cousins, or more distant relatives.

Table LI shows that the proportion having deaf relatives (*a* or *b*) is greater among the deaf from adult life than among the deaf from childhood, and greater among the partially deaf than the totally deaf. It is also greater among females than males. It is greatest of all among deaf persons whose parents were cousins (parents cousins, 55.5 per cent; not cousins, 30.6 per cent).

In the case of the deaf from birth (Table L) 45.5 per cent had deaf relatives (*a* or *b*); so that it seems strange that the proportion having deaf relatives should be smaller among the deaf from childhood (which includes the deaf from birth) than among those who

TABLE LI.—THE PER CENT OF THE DEAF HAVING DEAF RELATIVES (*a* or *b*), SHOWN FOR THE DEAF CLASSIFIED BY PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, CONSANGUINITY OF PARENTS, AND SEX OF MARRIED DEAF.

CLASS OF DEAF RELATIVES.	Total.	PERIOD OF LIFE WHEN DEAFNESS OCCURRED.		DEGREE OF DEAFNESS.		SEX.		CONSANGUINITY OF PARENTS.		THE MARRIED DEAF.		
		Childhood (under 20).	Adult life (20) and over).	Totally deaf.	Partially deaf.	Male.	Female.	Parents cousins.	Parents not cousins.	Total.	Male.	Female.
Deaf relatives :												
Stated	100 0	100.0	100.0	100.0	100.0	100 0	100.0	100.0	100.0	100.0	100.0	100.0
a	26.9	25.0	30.2	23.5	29.5	25.0	29 0	47.3	25.5	29.7	27.8	32.3
—	73.1	75.0	69.8	76.5	70.5	75.0	71.0	52 7	74.5	70.3	72.2	67.7
(*a* or *b*)....	32.1	30.7	34.7	28.8	34.6	30.1	34.4	55.5	30.6	34.7	32.5	37.8
a b....	5.1	5 0	5.4	4 3	5 7	4 6	5.7	10.5	4.8	5.6	5.1	6.4
a — ..	21.8	20.0	24.8	19.2	23.8	20.4	23.3	36.8	20.7	24.1	22.7	25.9
— *b*....	5.2	5.7	4.5	5 3	5.1	5.1	5.4	8.2	5.1	5.0	4.7	5 5
— —...	67.9	69.3	65.3	71.2	65.4	69.9	65.6	44.5	69.4	65.3	67.5	62.2

became deaf in adult life. This means, of course, that the percentage having deaf relatives must be still smaller among the noncongenitally deaf from childhood. If we limit our inquiry to the deaf from early childhood (under 5), all of whom belong naturally to the class deaf and dumb, we find that even in their case the proportion having deaf relatives is smaller than in the case of the deaf from adult life. From Table L it appears that 9,367 persons who became deaf before reaching the age of 5 had *a* or *b* deaf relatives; and these constitute 30.6 per cent of the stated cases, whereas 34.7 per cent of the deaf from adult life had deaf relatives (*a* or *b*) (Table LI).

Of the 9,367 cases referred to above 6,116 were deaf from birth and 3,251 became deaf after birth and before reaching the age of 5 (Table L). Thus 45.5 per cent of the deaf from birth, 18.9 per cent of the noncongenitally deaf from early childhood (under 5), and 34.7 per cent of the deaf from adult life had *a* or *b* deaf relatives.

These figures are very striking and seem to indicate that heredity has played a part in the production of congenital deafness, and also of deafness occurring in adult life (caused principally by catarrh); whereas deafness occurring in early childhood after birth and under the age of 5 (due principally to scarlet fever, meningitis, and brain fever) is probably adventitious in a large proportion of cases—the sporadic cases constituting 81.1 per cent of the whole.

The partial deafness of adult life caused by catarrh usually comes on gradually and sometimes affects different members of the same family at or about the same age. It is probable, therefore, that a tendency toward catarrh is hereditary in these families, producing deafness occasionally in different members by extension to the middle ear; or the inherited tendency may be toward a local catarrh of the middle ear.

The noncongenital deafness of early childhood, caused mainly by scarlet fever, meningitis, and brain fever, is more accidental in character, and is probably due chiefly to extraneous causes of an epidemical nature producing total deafness in a large proportion of cases.

The causes of congenital deafness are very obscure, but it is obvious that in many cases hereditary influences are involved. This is shown by the large proportion having deaf relatives. It is also shown by the large proportion of the deaf from birth whose parents were cousins, and by the large proportion of the deaf whose parents were cousins who were born deaf (Table XLVII.[1]).

[1] See April, 1908, number of the REVIEW.

The most prominent figures of Table L are reduced to percentages in Table LII. In this table the deaf are arranged by age groups when deafness occurred, and the percentage in each age group who have *a* or *b* relatives is shown.

TABLE LII.—THE PER CENT OF THE DEAF HAVING DEAF RELATIVES (*a* or *b*), SHOWN FOR THE DEAF CLASSIFIED BY AGE WHEN DEAFNESS OCCURRED.

CLASS OF DEAF RELATIVES.	AGE WHEN DEAFNESS OCCURRED DEFINITELY STATED.								
	Birth.	After birth, under 5.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 40.	40 and under 60.	60 and under 80.	80 and over.
Deaf relatives: Stated	100.0	100.0	100.0	100.0	100.0	100.0	100 0	100.0	100.0
a	39.4	13.4	16.9	29.2	34.2	34.2	31.1	22.0	12.7
—	60.6	86.6	83.1	70.8	65.8	65.8	68.9	78.0	87.3
a or *b*	45.5	18 9	21.8	34.7	40.8	39.8	35.5	24.6	14.0
a and *b*	7.6	2.3	3.2	7 3	8.3	7.0	5.2	2.0	1 0
a —	31.8	11.1	13.7	21.9	25.9	27.2	25.9	20.0	11.7
— *b*	6.1	5.5	4 9	5.5	6.6	5.6	4.4	2.6	1.3
— —	54.5	81.1	78.2	65.3	59.2	60.2	64.5	75.4	86.0

In the noncongenital cases it will be observed that the proportion having *a* or *b* relatives deaf is small among the deaf from early childhood (under 5), and then becomes progressively greater where deafness occurred in middle childhood (5 to 10) and late childhood (10 to 15), reaching a maximum in youth or adolescence (15 to 20). This maximum is substantially retained during early manhood (20 to 40), and then the percentage progressively diminishes in middle life (40 to 60), declining years (60 to 80), and old age (80 and over).

Where deafness occured during these periods of life the percentages having deaf relatives (*a* or *b*) are respectively as follows: 18.9, 21.8, 34.7, 40.8, 39.8, 35.5, 24.6, and 14 (Table LII).

The noncongenitally deaf who lost hearing between the ages of 15 and 40 show the largest percentage having deaf relatives (*a* or *b*)—about 40 per cent.

The evidence seems to point to heredity as a contributing cause of deafness in two classes of deaf persons, the deaf from birth (most of whom are totally deaf), and the deaf from catarrh (most of whom are partially deaf).

Persons who lost hearing from affections of the middle ear, however (including catarrh), are found mostly in those parts of the country which have the least sunshine (Map 10[1]), namely, the New England states and the states bordering on the Great Lakes, so that it is probable that climatic conditions have a good deal to do with the production of catarrhal deafness. As the members of the same family would often be exposed to identical climatic conditions, we might reasonably anticipate that catarrhal deafness would sometimes appear in more than one member of the same family, quite independently of any hereditary tendency toward the disease (Map 6[1]).

The geographic congestion of the deaf from scarlet fever, however, is even more marked (Map 5[1]), and it is not at all unusual for several members of the same family to be ill from scarlet fever at the same time. The deaf from meningitis, too, an epidemic disease of great virulence, show a very marked geographic congestion within a limited area of country, having its center in Indiana (Map 8[1]); and yet the percentage having *a* or *b* relatives deaf is small among the noncongenitally deaf from early childhood (under 5), most of whom lost hearing from scarlet fever and meningitis, while it is large among the deaf from adult life, most of whom became deaf from catarrh. The hereditary character of catarrhal deafness can hardly be doubted.

c relatives.—Six hundred and seventy-seven deaf persons are returned who have deaf children; 319 of these were males and 358 females (Table LIII). The number of deaf children born to these persons is not stated in the tabulated returns, but we may form some idea of the number by ascertaining how many families were formed by these 677 persons and crediting each family with one deaf child.

Of the 677 persons reported to have deaf children, 437 (250 males and 187 females) appeared among the returns of the married deaf (Table LVII[2]); and the remaining 240 cases (69 males and 171 females) were returned among the single, widowed, or divorced. These 240 cases, therefore, constituted 240 families, 69 of which had deaf male heads only, and 171 deaf female heads.

Of the 437 cases which appeared among the married deaf, 159 were deaf persons with deaf husbands or wives (79 deaf males with deaf wives and 80 deaf females with deaf husbands) (Table LVII), and in 278 cases the husbands or wives were not deaf—that is, they

[1] See February, 1908, number of the REVIEW.

[2] Omitted from this republication.

were hearing persons. These consisted of 171 deaf males with hearing wives and 107 deaf females with hearing husbands.

If we assume that the deaf males with deaf wives constituted the same families as the deaf females with deaf husbands, then we find a total of 80 families containing deaf children in which both the husbands and wives were deaf.

The 278 cases in which the husbands or wives were not deaf constituted 278 families. Thus the 677 persons reported as having deaf children (Table LIII) constituted 598 families; and if each family had only one deaf child, then there were 598 deaf children having one or both parents deaf. This is a minimum estimate, for some of the families considered undoubtedly contained two or more deaf children. Cases are well known in which two, three, four, five, six, and even seven deaf children have appeared in families in which both the parents were deaf mutes.

The deaf whose parents were deaf were reported in the original verified census schedules, but unfortunately the returns have not been tabulated separately, being simply included in the returns of those having *a* relatives (deaf brothers, sisters, or ancestors). We are therefore obliged to resort to an estimate; and all we can conclude from the tabulated statements is that more than 598 deaf persons having one or both parents deaf are referred to in the present census. How many more it is now impossible to ascertain without resort to the original schedules.

Out of a total population of 75,994,575 persons, 89,287, or 1,175 per million, were returned as deaf. If, then, the children of deaf persons were no more liable to deafness than the people generally of the United States, we should expect to find 105 deaf persons returned whose parents were deaf, for this number would constitute 1,175 per million of the deaf population. But the above facts show that more than 598 deaf children of deaf parents exist in the United States, from which it is obvious that the tendency to deafness among the children of deaf persons is more than five and one-half times as great as in the case of the general population of the United States. How much more can not now be ascertained excepting by a special investigation of the original schedules.

Table LIII shows the deaf who have deaf children (*c*), by deaf relatives (*a* or *b*), by period of life when deafness occurred, degree of deafness, sex, and consanguinity of parents, giving the number and percentage in each class.

TABLE LIII.—THE DEAF HAVING DEAF CHILDREN (*c*), CLASSIFIED BY PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, CONSANGUINITY OF PARENTS, AND DEAF RELATIVES (*a* or *b*).

CLASS OR DEAF RELATIVES.	Total.	PERIOD OF LIFE WHEN DEAFNESS OCCURRED.			DEGREE OF DEAFNESS.		SEX.		CONSANGUINITY OF PARENTS.		
		Childhood (under 20).	Adult life (20 and over).	Unknown.	Totally deaf.	Partially deaf.	Male.	Female.	Parents cousins.	Not cousins.	Not stated.
Number:											
c	677	282	376	19	246	431	319	358	31	599	47
(*a* or *b*) *c*	307	149	155	3	127	180	142	165	21	272	14
a b c	71	42	29	.....	33	38	36	35	5	65	1
a — *c*	198	92	103	3	80	118	92	106	16	171	11
— *b c*	38	15	23	.....	14	24	14	24	.....	36	2
— — *c*	370	133	221	16	119	251	177	193	10	327	33
Per cent:											
c	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
(*a* or *b*) *c*	45.3	52.8	41.2	[1]	51.6	41.8	44.5	46.1	[1]	45.4	[1]
a b c	10.5	14.9	7.7	.....	13.4	8.8	11.3	9.8	.....	10.9	.....
a — *c*	29.2	32.7	27.4	.....	32.5	27.4	28.8	29.6	.....	28.5	.....
— *b c*	5.6	5.2	6.1	.....	5.7	5.6	4.4	6.7	.....	6.0	.....
— — *c*	54.7	47.2	58.8	.....	48.4	58.2	55.5	53.9	.....	54.6	.....
Per cent:											
c	100.0	41.7	55.5	2.8	36.3	63.7	47.1	52.9	4.6	88.5	6.9
(*a* or *b*) *c*	100.0	48.5	50.5	1.0	41.4	58.6	46.3	53.7	6.8	88.6	4.6
a b c	100.0	[1]	.....	.....	.....	.....	.....	.....	.....	.....	.....
a — *c*	100.0	46.5	52.0	1.5	40 4	59.6	46.5	53.5	8.1	86.3	5.6
— *b c*	100.0	[1]	.....	.....	.....	.....	.....	.....	.....	.....	.....
— — *c*	100.0	36.0	59.7	4.3	32.1	67.9	47.8	52.2	2.8	88.3	8.9

[1] Percentage not given where base is less than 100.

Table LIII reveals the fact that the majority of the deaf who have deaf children are persons who became deaf in adult life. This result is somewhat surprising and could not have been anticipated. It only confirms the conclusion reached upon other grounds that heredity sometimes plays a part in the production of catarrh of the middle ear—the chief cause of deafness occurring in adult life.

The total number returned as having deaf children is 677, of whom 63.7 per cent were partially deaf and 55.5 per cent deaf from adult life; 52.9 per cent were females; 45.3 per cent had *a* or *b* deaf relatives; and 4.6 per cent were the offspring of cousin-marriages.

In the case of the deaf who had deaf children, the proportion having deaf relatives (*a* or *b*) is greater among those deaf from childhood than adult life; and greater among the totally deaf than the partially deaf (Table LIII). The opposite is the case among the whole of the deaf (Table LI).

TABLE LIV.—THE DEAF HAVING DEAF HUSBANDS OR WIVES (*d*), CLASSIFIED BY PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, CONSANGUINITY OF PARENTS, AND DEAF RELATIVES (*a*, *b*, or *c*).

CLASS OF DEAF RELATIVES.	Total.	PERIOD OF LIFE WHEN DEAFNESS OCCURRED.			DEGREE OF DEAFNESS.		SEX.		CONSANGUINITY OF PARENTS.		
		Childhood (under 20).	Adult life (20 and over).	Unknown.	Totally deaf.	Partially deaf.	Male.	Female.	Parents cousins.	Not cousins.	Not stated.
d	5,051	4,471	486	94	4,191	860	2,532	2,519	265	4,531	255
(*a* or *b*) *d*	1,477	1,332	123	22	1,238	239	735	742	159	1,250	68
a b d	244	221	19	4	205	39	127	117	27	206	11
a — *d*	984	880	90	14	814	170	479	505	119	818	47
— *b d*	249	231	14	4	219	30	129	120	13	226	10
— — *d*	3,574	3,139	363	72	2,953	621	1,797	1,777	106	3,281	187
c d	164	151	12	1	141	23	81	83	13	141	10
(*a* or *b*) *c d*	85	79	5	1	75	10	44	41	11	69	5
a b c d	23	20	3	.....	20	3	16	7	3	19	1
a — *c d*	54	51	2	1	48	6	26	28	8	43	3
— *b c d*	8	8	.....	.....	7	1	2	6	.....	7	1
— — *c d*	79	72	7	.....	66	13	37	42	2	72	5
— *d*	4,887	4,320	474	93	4,050	837	2,451	2,436	252	4,390	245
(*a* or *b*) — *d*	1,392	1,253	118	21	1,163	229	691	701	148	1,181	63
a b — *d*	221	201	16	4	185	36	111	110	24	187	10
a — — *d*	930	829	88	13	766	164	453	477	111	775	44
— *b* — *d*	241	223	14	4	212	29	127	114	13	219	9
— — — *d*	3,495	3,067	356	72	2,887	608	1,760	1,735	104	3,209	182

In both cases, however, the percentage is greater among females than males; and greater among those whose parents were cousins than among those whose parents were not.

Nearly one-third of the whole deaf population, 32.1 per cent, had *a* or *b* deaf realtives (Table LI); and nearly one-half, 45.3 per cent, of the deaf who had deaf children had *a* or *b* relatives deaf (Table LIII).

d relatives.—Out of a total of 89,287 deaf, 5,051 had deaf husbands or wives (*d*), 75,430 had not, and in 8,806 cases the question relating to deaf relatives remained unanswered (Table XLIX).

We can not assume that the 75,430 persons referred to above had hearing husbands or wives, for the figures include the whole of the deaf—the single as well as the married, widowed, and divorced. Even in the case of the 5,051 deaf persons who had deaf husbands or wives (*d*), we can not assume that the deaf husbands or wives reported were all living at the time the census was taken; for only 4,965 appear in the returns of the married (Table XLIX), so that the remaining 86 were either widowed or divorced.

Table LIV shows the deaf who had deaf husbands or wives (*d*), by deaf relatives (*a, b,* or *c*); by period of life when deafness occurred, degree of deafness, sex, and consanguinity of parents.

From Table LIV it appears that of the 5,051 deaf persons who had deaf husbands or wives, 88.5 per cent were deaf from childhood, 9.6 per cent were deaf from adult life, and in 1.9 per cent of the cases the period of life when deafness occurred was unknown; 83 per cent were totally deaf and 17 per cent partially deaf; 50.1 per cent were males and 49.9 per cent were females; 5.2 per cent were the offspring of cousin-marriages, 89.7 per cent were not the offspring of cousins, and in 5.1 per cent of the cases the question relating to consanguinity of parents remained unanswered; 29.2 per cent had deaf relatives (*a* or *b*) and 70.8 per cent had no (*a* or *b*) deaf relatives; 3.3 per cent had deaf children (*c d*) and 96.7 per cent had no deaf children (— *d*)—that is, they had either hearing children or no children at all.

Table LIV shows that in the case of the 5,051 persons reported to have deaf husbands or wives, the vast majority were deaf from childhood (88.5 per cent), and the vast majority were totally deaf (83 per cent). This, taken in connection with the fact of the nearly equal division of the sexes, leads to the inference that in most of the cases of intermarriage of deaf persons with one another both of the parties to the marriage were deaf from childhood, and both totally deaf. Most of these persons lost hearing before reaching the age of 5 (Table LVII), and belonged, naturally, to the class deaf and dumb; so that these unions consist largely of intermarriages of deaf mutes with one another.

(*To be continued.*)

IN MEMORIAM: JOHN HITZ.

March 25, 1908.

[The death of Mr. Hitz occurring, as it did, just as the April number of the REVIEW was in press, precluded the possibility of any account of his life and work, or of the insertion of the memorial addresses read at his funeral. We take pleasure in printing the latter now. Miss Mary Barton, the friend to whose care Mr. Hitz left his papers, has in preparation a biographical account which we shall hope to print at some future date.

The address of the Swiss Minister is given both in its original German and in its English translation, the latter being made by Miss Helen Keller for the REVIEW. It seemed especially appropriate that this beautiful German tribute should be set into equally beautiful English by one who, as she records, was first taught to love the German by Mr. Hitz. Of this translation the Swiss Minister writes that "it seems to him remarkably well done, and has his full approval."—EDITOR.]

ADDRESS BY REV. FRANK SEWALL, D. D.

In the departure of our friend to those higher and happier fields of service to which his Divine Master and ever merciful Lord has called him, this community feels the loss of a distinguished and highly valued citizen. The Church Society of which he was a member so many years will feel that outwardly is gone from them a spiritual support in his intelligent and deeply spiritual faith, and constant loyalty and devotion to the Church and all its interests—one who in early years was a leader and teacher of the young, whose loving influence has never been forgotten by them.

But much farther than this his influence extended, and the pulsations of affectionate regard and honor awakened by this event will be felt throughout the world of enlightened benevolent educational effort.

To this vast community, confined to no nation—the blind, the deaf, and the dumb—the loving services of this devoted friend of mankind, in the administration of the Volta Bureau, has been literally like helping the blind to see, the deaf to hear, and the dumb to speak. No one realized more deeply than he the great spiritual realities that lay beneath all these endeavors. He knew that there is a world of spiritual substance as real as matter, and that man has a

complete spiritual body beside his body of flesh. This knowledge inspired and helped him in outward ministrations for the restoration or the preservation of bodily organs of sense. None felt more than he the entire dependence of all benevolence, and of science itself, on the one great Source of Light and Health, the Savior, Jesus Christ, for beneficial results. It was this that lent the high inspiration to his life, and that made itself felt to all. Laboring for such a cause, and for such a Master, his life was a marvelously whole and happy one. Like that of his great fellow-countryman, Pestalozzi, it was lived upon that high plane of enlightened benevolence that, like the tranquil but glittering tops of the great mountains of his beautiful motherland, it seemed to reflect more directly the clear bright sunshine of the heavens.

His personality, sweet by the disclipine of trial, radiated the gentle influence of true friendship toward all whom he could benefit. The last message of his earthly life was but a concluding expression here of that benevolent helpfulness which has enabled him for so many years to be the spiritual guide and friend of one whose influence in return will always radiate to others the same beams of hope, of joy, of gratitude for the blessings of life.

Our friend needs no eulogy, nor would his own choice permit it. His tribute is a living one in the affection of his vast circle of grateful friends who have felt the genial and uplifting influence of his life. His monument is in the enlarged and improved instrumentalities for benevolence and education to which his labors were devoted, and in response to which many generations will feel the high and noble impulses of his life.

ADDRESS BY DR. LEO VOGEL, MINISTER FROM SWITZERLAND.

HOCHVEREHRTE ANWESENDE:

Es drängt mich, als Vertreter der Schweiz, einige Worte an Sie zu richten, zur Erinnerung an unsern lieben verstorbenen Freund, der selbst vor vielen Jahren eine Zeit lang als Vertreter seines Heimatlandes hier tätig gewesen ist. Ich bediene mich dabei seiner Muttersprache, der er bis an sein Lebensende stets treue Anhänglichkeit bewahrt hat. Sein Tod bedeutet für die Schweizer in Washington einen schweren, unersetzlichen Verlust. War er doch jedem einzelnen unter ihnen ein zuverlässiger Freund und Berater. Ich selbst werde immer der warmen und innigen Freundschaft eingedenk sein, die mich seit Jahren mit ihm verband. Unter

seinen Landsleuten gibt es wohl nicht einen, dem er nicht bei irgend einer Gelegenheit etwas Gutes, etwas Liebes, etwas Freundliches erwiesen hat. Er war ein Mann von durchaus lauterem und edlem Charakter, ein Mann von hohen Geistesgaben, ein Mann reinen und warmen Herzens, mit einen kindlichen Glauben an das Beste in seinen Mitmenschen, ein Mann, der sich bis in sein hohes Alter eine jugendliche Begeisterungsfähigkeit erhalten hatte, die ihm über das Böse und Schlechte der Welt hinweghalf, und ihn über das Durchschnittsmass der Allgemeinheit erhob, ein Mann mildtätig und gut, immer bereit einzuspringen, wo es Not tat, mit Rat und mit werktätiger Hülfe, ein Mann, der in Wahrheit dem Spruche nachgelebt hat: Liebe deinen Nächsten wie dich selbst. Und ich bin stolz sagen zu können: er war ein Schweizer durch und durch mit jeder Fiber seiner Seele, mit jedem Ausdrucke seines Wesens. Seine glühende Liebe zum alten Vaterlande hat er mit in den Tod genommen, aber sie wird fortleben in allen denen, die ihn als Schweizer gekannt, verehrt und geliebt haben. Wie oft hat er nicht zu mir gesprochen von den Schönheiten und Herrlichkeiten seiner Heimat, von den vielen Freunden, die er dort besass, von dem Entzücken, das ihn durchströmte, wenn er wieder in ihren Gefilden und auf ihren Fluren wandeln konnte. Gerade für den kommenden Sommer hatte er wieder eine Reise dorthin in Aussicht genommen; wie ein Kind freute er sich darauf, und er machte dafür immer neue und schöne Pläne. Diese Pläne, sie sind leider alle zu Nichte geworden, denn ein hartes und unerbittliches Geschick hat ihn allzufrüh hinweggerissen. Wenn wir nun aber auch an seiner Bahre trauern, so wollen wir uns doch den Trost nicht rauben lassen, dass sein Wirken in Dienste der Menschheit nicht verloren gehen wird, dass er ein hohes und schönes Alter in voller Gesundheit und Geistesfrische erreicht hat, und dass ihm ein leichter und schmerzloser Tod beschieden war. Mit diesem Troste wollen wir sein Bild in unsern Herzen aufrichten, als das einer edeln und erhabenen Erscheinung, die uns allen zum Vorbild dienen kann; wir wollen sein Andenken hoch und heilig halten in unserer Brust, so lange wir selbst leben und wir wollen seiner Asche einen ruhigen und seligen Frieden wünschen.

TRANSLATION OF DR. VOGEL'S ADDRESS BY HELEN KELLER.

DEAR FRIENDS:

It is my duty as minister from Switzerland to say a few words to you in memory of our dear dead friend, who himself acted for many years as representative of the Swiss in America. On this occasion I use his mother tongue, for which he kept a loyal affection to the end of his life.

His death means to the Swiss people in Washington a great, irreparable loss. To each one of them he was a constant friend and adviser. I myself shall not forget the warm and intimate friendship which bound me to him for years. Among his countrymen there is not one for whom, as an opportunity offered itself, he did not do something good, something lovable, something kind.

He was a man of thoroughly pure and noble character, a man of lofty spiritual gifts, a man who had a good, warm heart with a childlike faith in the best in his fellowmen, a man who kept to his old age a youthful buoyancy that helped him through the labors and sorrows of the world, and lifted him above the average of mankind, a good and benevolent man, always ready to come forward with advice and active aid when there was need, a man who lived in accordance with the commandment, "Love thy neighbor as thyself." And I am proud to be able to say, he was Swiss in every fibre of his soul, in every expression of his being. In death he has taken with him his ardent love for the old fatherland. But this love will continue to live in all those who have known him as a Swiss and honored and loved him. How often has he not spoken to me of the beauties and glories of his home, of the many friends he had there, of the delight which flooded him whenever he could wander again in the Swiss fields and meadows. He had decided to go there once more during the coming summer. He was happy as a child at the prospect, and he was always making new and beautiful plans. Unhappily, these plans have come to nothing; for a bitter and inexorable lot has wrested him away.

But if we now mourn at his bier, we will not let ourselves be robbed of the consolation that his work in the service of humanity will not be lost; that he reached an extreme old age in perfect health with his faculties unimpaired; that an easy and painless death was allotted to him. With this comfort we shall set up his image in our hearts as a noble and lofty vision; we shall hold his memory sacred and holy so long as we live; and we shall wish rest and peace to his ashes.

JOHN HITZ AS I KNEW HIM.

By Helen Keller.

Only those who knew Mr. Hitz can realize what his friendship meant to me. Nothing that I can write will recall one who was so noble and beloved. I shall not attempt to outline the facts of his life; but I will try to impart to others the sense that a wise, good man has lived among us like a benediction, that no one more lovable than Mr. Hitz has come into this world and gone out of it.

John Hitz was born September 14, 1828, at Hope Glen, in Davos, Switzerland—the little hamlet in the heart of the Haertian Highlands which has since become a famous health resort. I have a book on Davos full of fine pictures, which he left with us last summer. But it is not half so eloquent as were his accounts of the mountains, five thousand feet above sea level, the sunrise and the radiant Alpine flowers. He always talked to me about Switzerland in his mother tongue, and I have come to love German almost as my own language.

He was a man of wide experience, and he told me many stories about his varied, adventurous youth. In 1849 he went out to California. He saw the West as it was then, primæval, full of savage beauty. He saw the endless train of emigrants making their way over the prairies to the distant wilds. He observed all manner of men who invaded the vast solitudes. He witnessed the magic with which gold built up cities and spread nations along the Pacific coast. He had occasion often to share in the hard life, the brave fight of those who journeyed thither, and he showed the old indomitable Swiss courage.

When Mr. Hitz returned east, he engaged in the manufacture and sale of pianos, and taught music in various schools. I have been told that before his hearing was impaired he played the piano with masterly skill. He was deeply interested in educational matters, especially manual training. He himself was a skillful wood-worker, true to the Swiss tradition that every one must learn a trade. He exerted his influence to have manual training established in American schools, and although it is still far from occupying the place it deserves, American educators have begun to appreciate its importance. He traveled extensively in foreign lands and came into con-

tact with many eminent men. He was in Washington during the Civil War, and knew Lincoln, Grant, and Sherman. On his father's death in 1864, Mr. Hitz succeeded him as Consul General from Switzerland, and held this office until 1881.

I can give no adequate idea of Mr. Hitz's varied activity. He was a man of tireless energy, interested in the promotion of every human happiness. He was one of the incorporators of the American Red Cross Society, an early and active member of the American Forestry Association. He told me of the many kinds of grass, grain, and trees that he sent to Switzerland to be cultivated.

I met Mr. Hitz first in 1892, and ever since he has been like a father to me. In May, 1893, the work on the Volta Bureau, with which his name is associated, was begun, and I well remember how I turned the first sod on the land for the building. The Volta Bureau was henceforth his home. He lived in the work, and gave the rest of his years to realizing Dr. Bell's long-cherished plan. Most of those who knew Mr. Hitz as Superintendent of the Volta Bureau remember him as a solitary man. But in his solitude his great soul went out to others loving and loved again. He could truly say to me, "I am alone, but not lonely." To the last day of his earthly life he bestowed the greatest care and affection on his work, for which he was qualified by his sound views on education, his wise sympathies, and his acquaintance with distinguished men the world over.

In addition to his labors for the deaf, Mr. Hitz was greatly interested in the blind. I have letters from him full of suggestions as to how I might work more efficiently, full of enthusiasm for the new efforts to bring instruction, usefulness, and pleasure to the sightless. He followed our endeavors as if they were his own, and cheered us on toward the goal. His constant message was that I should "contribute a share to the inalienable treasures of enlightenment, the betterment of man, and the praise of God." The deaf and the blind have lost more than they can ever know in losing his sympathy and service. Would that all workers for these two classes were like him, disinterested, broad in their views, more anxious for the good of those whom they undertake to help than for the advocacy of theories.

How shall I write his kindness to me, whom he called "meine innigst geliebte Tochter?" I called him Pflegevater. Once a conductor on a train asked him if he was my father. "Yes," he promptly replied, "I am her foster-father." Every day he had

a plan for giving me pleasure. His abundance of resource even to the little intimate needs of daily life used to make us laugh with delight. There was nothing we wanted which he did not have in his pockets, or could not invent. One day we were off on a long drive in search of cardinal flowers and ferns. The thought came over us that they would wither long before we got home. Behold, Mr. Hitz produced on the instant a jar filled with water—where he had found it we never knew—and fastened it to the dashboard, saying: "So now, you can carry a bit of the cardinal meadow along with you and enjoy it all day."

At the age of seventy Mr. Hitz learned braille, so that I could read his letters myself. Every morning he worked an hour before breakfast transcribing whatever he thought I should enjoy reading. Thus he copied for me books and articles on a large variety of subjects—poetical, philosophical, religious, social, also books for happy leisure hours. In a letter he wrote: "I certainly do enjoy transcribing this wonderful work (one of Swedenborg's books) for you, and the well-nigh daily association of thought with you it brings to render beautiful and bright what may seem to some my solitary hours." He also ordered many valuable books for me in French and German.

Mr. Hitz followed me through college with close sympathy and insight. We discussed freely literature and history, and he sought to give me new aspects of great historical events. We discussed philosophy, in which he was widely read, and he urged me to cultivate it long before I thought of a course in Radcliffe. Once he wrote: "As I have already told you several times, you have a natural bent for introspection, which in more advanced years assumes the character of philosophy, and which, added to your gift for literary studies in their various forms, would invest your writings in time with a depth of thought that could not fail to prove enlightening and uplifting to humanity in general." He anticipated the ardor with which I was to study the history of human thought. He almost exactly voiced the problems of touch, of internal sensation, and of mental processes which would perplex me.

To my merry moods, too, Mr. Hitz was responsive. He loved all that brings delight—the hills, the streams, the sunny spots of green,

> "The fresh earth in new leaves dressed
> And the starry night,
> Autumn evening, and the morn
> When the golden mists are born."

He visited my teacher and me every summer, and we spent much time out of doors. I liked best to ramble with him through the woods because he could hear me best in their happy silence. He described the trees and flowers I could not touch, until they seemed a tangible part of my experience. To the last he retained a vitality that made him young with the young. He said I never seemed deaf or blind to him, and I could not think of him as old. His spirit was so gracious and happy it radiated grace and happiness to others. He had more than his share of sorrow and disillusionment. Yet his faith in human goodness never wavered. Even when failing health forced him to walk with painful slowness, I did not lose the impress of his inner vigor and joy. He breathed the fragrance of the fields, of the pines, and of the flowers as he had done sixty years before. He rejoiced amid the birds, the rocks, and the hills with the unalloyed joy of childhood. As we wandered together from one lovely nook to another, he would often exclaim, "How glorious life is!" Winter was on his head, but eternal spring was in his soul. To him all was wonderful, yet simple; all was a dream, and yet all was fact. I remember that after our rambles every one would say, "See! the old man's face is beaming on us." If he could thus give a sense of delight and freshness to us, the young and strong, what must his example be for those who live as he did, amid the withering cares of the world!

To my teacher and me he showed constant affection which we appreciate all the more because we know he had a thousand friends. He loved a few deeply and at the same time cherished a warm regard for all men. I have met many people who welcomed him to their homes and cheered his lonely evenings with sociable talk, games and readings. Each has had an anecdote of Mr. Hitz's kindness or a tender eulogy of him as a faithful friend.

To women he brought a special message; for he was in sympathy with all sane work for their advancement. It was his unceasing effort to foster in us a larger activity. He exhorted us to think, that we might develop a greater capacity for usefulness. He disapproved our shrinking from independent, fearless thought and reflection. With John Stuart Mill he held that a woman must think before she can feel the just value of things, while a man must feel before he can think justly. He desired us to grow, grow with the world's growth, to beware any circumscription of our minds, as we would beware any grudging of our sympathy. When I abandoned a certain scheme for work which appealed to the

affectional side of my nature but which would have interfered with my college studies, he expressed his strong approval.

It was Mr. Hitz who introduced me to the writings of Emanuel Swedenborg. I have a lasting impression of the superb spirituality of Mr. Hitz's life. The spirit-realm, of which he gave me many beautiful and definite ideas, seemed close, real to him. The hereafter was not to him a recompense dreamed of as a refuge from the world's ills. It was a present, eternal, joyous, inspiring world that shed its glory upon material surroundings. He was as much himself, as thoroughly human there as here. He lived in the midst of earthly limitations as he believed he would in the freedom of another world. I cannot feel that he is dead now. His departure is to me as that of one living and absent. His unbroken silence alone makes the difference in my life.

LANGUAGE AND LANGUAGE TEACHING IN GERMAN SCHOOLS.

By Hugo Hoffman, Ratibor, Germany.

Prefatory.

In the following presentation, I purpose to give the readers of the Association Review an insight into the methods pursued in teaching language in German Schools for the Deaf. I do so from the objective aim they present to me, noting at times my reasons for entertaining divergent views, hoping thereby to prove of service to others in drawing comparisons and forming conclusions.

Language in general is a means for expressing our thoughts. This *expression* of thoughts must, however, he held distinct from the thoughts themselves. We have, therefore, to distinguish between an external and an internal language. Externally it presents itself as movements of expression, and these movements may manifest themselves by sounds, written characters, or gestures. In all cases we have to do with motor effects, which depend upon internal causes. The internal causes giving rise to language movements are sensations and emotions, which, in their turn, depend upon ideas.

Every human being must necessarily use some form of language expression to make known his internal states. Nature has given him the means to do this. The use of these means presents no difficulty so long as his environment is normal, and as his limitations restrict him to a primatively natural intercourse with the surrounding world. But this is changed when, in accordance with plans and purposes to achieve culture, he begins to shape his own environment consciously. Then the established conformity to all processes governing his environment, and the enlarged scope of thought attained, exact, in intercourse with his fellowmen, expression with increased urgency, compelling him to seek greater and more choice means to express his thoughts and feelings. It is then necessary that he should have special language culture, involving not only instruction in the use and understanding of established forms and idioms of speech, but also the development of the faculty to grasp, through the senses and reflection, the things in themselves, and likewise their inter-relations.

With reference to language, the uninstructed deaf child resembles man existing in his primitive state. The problem, therefore, in his language instruction is, to arouse him out of his lingual inertia, and to transmit to him, at least in this direction, a part of the gains of culture. Or, in other words, by instruction in speech he must be taught to use means of language utterances other than those he has heretofore used, if he is to gain intercourse with hearing humanity. Furthermore, he must be taught to express his own thoughts as well as to understand those of others, being given opportunity at the same time to gain new perceptions and ideas.

Thus, language instruction is connected with the various phases of internal and external life; with the external conditions that affect the mind, and with the attitude of the mind towards the external world. The knowledge of the external world is gained through *object teaching,* which at first, especially in the lower grades (2nd and 3rd school years), constitutes a phase of language instruction which, later on in the course of his studies, having acquired greater command, should be persistently continued. The expression of the mental processes as thoughts, and the comprehension of the thoughts of others, is effected through instruction in linguistic forms. These are the two principal phases of language instruction, and on the one hand are to serve as mediums whereby to achieve a knowledge of things, and on the other to serve in imparting knowledge of forms of expression. The technical phase of language, hence, comprises also, in part, culture of its forms.

Both phases should receive equal and harmonious consideration in the instruction. This is not always the case in practice. This does not mean that the two phases of language instruction can receive the same attention in all stages of the language development of an individual; but it does mean that in the development as a whole, it is necessary to correlate the two phases closely, lest occasionally there appear lapses in the control of language on the part of the pupil. In order to satisfy this requirement, language instruction has been subdivided into a number of separate branches, which have been assigned a place conjointly or successively in the course according to their respective character.

However, before considering these separate branches and their special problems, it is necessary to mention an important difference, already indicated, between the language development of the deaf, and that of persons in full possession of their senses. This lies not so much in the necessity of teaching the deaf language in

the beginning mainly from the mechanical phase of sound-formation, as in the effort to enable him to form correct perceptions and ideas, so that he may acquire language concepts with which he may learn to carry on higher intellectual processes and to designate these in terms of language. The effort on the part of the deaf child to place himself in conscious relation with his environment, demands a return in instruction to a period of development which, with the hearing child, antedates the age for entering school; for the knowledge of things which the normal child acquires without intentional instruction from the third to the sixth year of life, in his intercourse with parents, brothers, sisters, and playmates, can be given to the deaf child only after entering school. This fact entails upon language instruction in an institution for the deaf a far greater task; hence *the requirement of organizing it in accordance with its distinct branches is even more justified than elsewhere.*

It has above been stated that, with the deaf, the giving of a knowledge of things, as a problem of language instruction, must not be deprecated. Nevertheless, it must also satisfy the ordinary requirements as to its formal side. This implies the control of the technics of the language, familiarity with grammatical forms indicating logical relations, skill in their use for the purpose of expressing thoughts, and alertness of apprehension for the purpose of understanding the written or spoken thought utterances of others. This results in a distinction of branches as follows:

(1) With reference to knowledge of things: object teaching and reading.

(2) With reference to form instruction: speech and articulation, language forms and grammatical constructions, composition, reading, and colloquial language instruction.

Since reading is referred to as serving both the real and the formal phases of language instruction, it must at the same time be mentioned that in the lower grades (second and third school years), it is more on the formal; in the intermediate grades (fourth to sixth school years), it is both real and formal; and in the advanced grades (seventh and eighth school years), increasingly so on the real side of development.

Since the lower or elementary grade (including the preparatory of one year) comprises three years, the intermediate grade again three years, and the advanced grade the last two years, and since of the 24 hours' instruction weekly in the lower grade, 18, 15, and 14 hours respectively in the first, second, and third years are devoted

to language instruction; and likewise of the 28 hours' instruction weekly in the intermediate grade, 14 hours, and of the 32 hours' instruction weekly in the advanced grade, 16 hours are assigned to language instruction, the distribution of the separate branches of language instruction are assumed to be as follows:

PREPARATORY GRADE (the first school year): Instruction in speech, object teaching, instruction in reading and writing: 18 hours weekly. *Aims:* formation of sounds, words, and sentences; acquisition of perceptions, establishment of ideas, simplest development of judgment, skill in reading and writing [stimulating perceptions in the different centers, and correlating these into association centers]. At this stage of language development, real and form development will be in equilibrium, if we consider that reading and writing may be looked upon as a *"disciplina mentis,"* inasmuch as its technical activity involves the first of language analysis.

ELEMENTARY GRADE: This comprises the second and third school years, and puts real knowledge of things in the foreground, since it is necessary to procure thought material as an intelligible basis for further language activity, and to secure a foundation for later instruction in literary and scientific (real) subjects.

While by some it is held that in this grade, and at least in the following, the acquirement and the understanding of language forms should be gained incidentally and exclusively through practice, in accordance with the so-called maternal school, myself with other practical teachers hold different views, and would even in this lower grade, in addition to the acquirement of language forms through practice, defend special systematic instruction in language forms. The "real" purpose (relating to information about things) of language instruction to which, as stated above, during the second and third school year, 15 and 14 hours respectively are assigned weekly, would be served by object teaching with 6 and 5 hours respectively; its form purpose by 3 hours. In this connection, however, it is to be considered that object teaching and colloquial instruction (2 hours) also contribute in a measure to formal language culture, since they enhance the use of language forms in the way of practice. The lessons in speech (two hours) are predominantly serviceable for technical purposes, while the reading lessons (two hours), which also, probably, will continue to present technical difficulties, will serve chiefly formal purposes, not, however, without profit in giving information about things.

INTERMEDIATE GRADE (fourth to sixth school year): Here the purpose and value of the several branches of language instruction assume a different character, inasmuch as the instruction in geography, history, and the natural sciences (Realien) takes up the task of extending the knowledge of things; consequently, language instruction is relieved thereby, and a reduction of the number of hours (to 14 weekly) is justified. While in the elementary grade the real (giving ideas) purpose predominated, the stress is here upon giving language forms.

On this account the leading position will be assigned to instruction in language forms (4 to 5 hours), while the sixth school year will become distinctly preparatory for later instruction in grammar; object lessons (with 3 to 4 hours) will be continued only as long as there is not sufficient provision in the time-table for instruction about things by means of instruction in geography, history, and the natural sciences, probably until the close of the fifth school year. In the reading lessons (2 to 4 hours weekly) the technical difficulties should have been overcome by this time; they should serve on the one hand to vivify and supplement information about things, and, on the other hand, aid form instruction, inasmuch as analytic reading facilitates the understanding and use of language forms.

Colloquial exercises (2 hours), as well as the exercises in composition, will have chiefly form value, inasmuch as the pupils will have to show in both subjects (orally in the one, and in writing in the other) to what extent they control the respective language forms. On the real side, composition (two hours) serves scarcely any other purpose than that of repetition.

From the considerations so far discussed it follows that the language instruction of the lower or elementary grade serves rather real (giving knowledge of things) culture, whilst that of the middle, or intermediate grade, serves chiefly form culture.

ADVANCED GRADE (seventh to eighth school year): As already stated above, language instruction here serves real and form culture equally. The entire number of hours for language instruction wil be 16 weekly, of which 6 hours are assigned to reading, 6 hours to grammar, 2 hours to composition, and 2 hours to colloquial instruction. Instruction in reading stands at the head. Its purpose is, on the one hand, to transmit information about things, inasmuch as its task is the same although of wider scope than in the intermediate grade, and, on the other hand, to give to a limited extent a knowledge of literature, thus serving at the same time the purpose

of form and of æsthetic ends. Finally, however, it will become purely informal in its cultural effect, since the reading matter will furnish ample opportunity to illustrate grammar in lucid examples, and inasmuch as it furnishes in itself material for practice. The previous instruction in language forms now becomes instruction in grammar, *i. e.*, while the pupils up to this time were instructed in the use of forms chiefly through practice and habituation, this is henceforth to be accomplished by rational methods: they are to be taught to understand the relations of parts with each other; they are to recognize and distinguish cause and effect, antecedent and consequence, co-ordination, super- and sub-ordination of parts, actuality, possibility, etc., etc., and to learn to understand in each case the correct grammatical designation in accordance with logical laws. Here there is constant opportunity to analyze and to synthesize; here, where the language itself becomes the object of exercise, the mind learns to think, becomes active, learns to survey given conditions, and—what for later life is of great importance—to act accordingly. The neglect of this cripples the mind so that it cannot free itself from the influence of its environment. The colloquial instruction will likewise serve both the real and the formal ends, and the purpose of form whether it introduces matters usually foreign to school work, or whether it imparts instruction and affords practice in the readiness of social intercourse, oral or in writing. Written exercises, which here, as in the previous grade, will always be reproductions, will serve both ends if they deal with what has been taught in the several branches of instruction.

The above considerations yield the following distribution of hours for language instruction for the eight school years:

I. PREPARATORY GRADE (18 hours weekly): In the first three quarters: Speaking, reading and writing alternately, 18 hours. In the last quarter: Instruction in speech, 9 hours; object lessons in connection with reading and writing, 9 hours.

II. ELEMENTARY GRADE (2nd and 3rd school years): 2nd school year: Object lessons, 6 hours; instruction in language forms, 3 hours; colloquial exercises, 2 hours; reading, 2 hours; instruction in speech, 2 hours. 3rd school year: Object lessons, 5 hours; instruction in language forms, 3 hours; colloquial exercises, 2 hours; reading, 2 hours; instruction in speech, 2 hours.

III. INTERMEDIATE GRADE (4th to 6th school years): 14 hours weekly. 4th school year: Instruction in language forms, 4 hours; object lessons, 3 hours; reading, 2 hours; colloquial exercises, 2

hours; composition, 2 hours; instruction in speech, 1 hour. 5th school year: Instruction in language forms, 4 hours; object lessons, 2 hours; reading, 3 hours; colloquial exercises, 2 hours; composition, 2 hours; instruction in speech, 1 hour. 6th school year: Instruction in language forms, 5 hours; reading, 4 hours; colloquial exercises, 2 hours; composition, 2 hours; instruction in speech, 1 hour.

IV. ADVANCE GRADE (7th and 8th school years): 16 hours weekly. 7th and 8th school years: Reading, 6 hours; grammar, 6 hours; colloquial exercises, 2 hours; composition, 2 hours.

THE GREAT EXTENSION OF THE MANUAL METHOD IN EUROPE IN THE LAST CENTURY OWING TO THE INFLUENCE OF EMPEROR JOSEPH II.

By Jos. Schara, Vienna, Austria.

The Imperial Institute for the Deaf and Dumb in Vienna is the second established of all German schools for the deaf. It was founded on the 31st of March, 1779, by Joseph II, Roman-German Emperor, son of the famous Empress Maria Theresia, and its first manager was Abbé Stork, a pupil of Abbé de l'Epeé. In the year 1777 Joseph II visited his sister, Maria Antoinette, the unhappy Queen of France, who was beheaded on the 16th of October, 1793, at Paris. On the occasion of the visit in Paris, Joseph II heard of the celebrated Institute of Abbé de l'Epeé, whom he immediately called on. Greatly touched by the marvelous work of the Abbé, the generous monarch resolved upon the founding of a similar institute at Vienna, which resolution was realized in the above-mentioned year.

In the book "Les Sourds-muets en France et en Allemagne," published by Etcheverry, 1876, in Paris, there are two letters which relate to the founding of this school in Vienna. As these letters are of great historical interest, I will give a full and exact translation of them. Both letters are written to the celebrated Abbé in Paris, the first by the Emperor himself, the second by Count Migazzi, Cardinal-Archbishop of Vienna.

I. Letter of Emperor Joseph II to Abbé de l'Epeé.

Vienna, *January 6th*, 1778.

Dear Reverend Father:

But no, I will say: my dear Abbé, for I love everybody, who serves his neighbor and loves him with so much unselfishness. The Institute, which you have established for the welfare of mankind and whose great success I had occasion to admire, causes me to send you Abbé Stork, who will deliver this letter in person. I presume he possesses the necessary abilities to learn from you to establish and to manage a like Institute in Vienna. I know him only through his clerical superior, who has recommended him and whose attention I have called to your remarks about "les dangers de Capone;" I think that I shall be able to answer for him. I hope that you will receive him and will impart to him your method, which you employ with so much success.

The glory and honor you have achieved in your work for the welfare of mankind in restoring to human society new members, lead me to hope, that your good heart may cause you to extend your charity to a part of the German deaf and dumb also, by instructing a teacher, who will provide the unhappy men with the necessary knowledge through sight, and who will teach them to think and to combine their thoughts.

Farewell and be assured of my great esteem for you.

JOSEPH II.

II. LETTER OF COUNT MAGAZZI TO ABBÉ DE L'EPEÉ.

VIENNA,, *January 2nd,* 1779.

You may be assured, sir, that your letter produced delight and thankfulness in me. I shall never fail to praise God's deeds, for it is He who has given you love for men who till now were abandoned to their misfortune, a love that is constant and always new. Receive also the assurance of my thankfulness for all the trouble you have had in instructing Abbé Stork, whose return I await with impatience. I have informed His Majesty the Emperor of your letter, who has noted with pleasure the testimony you gave of your pupil. I am with the most cheerful admiration, dear Sir,

Yours most respectfully,

COUNT MIGAZZI,
Cardinal-Archbishop of Vienna.

This act of the noble Emperor was the first cause of the increase of the teaching of the deaf, especially of the teaching by the Manual method. The example of the philanthropic ruler was imitated by some German princes, who sent teachers to Abbé de l'Epeé and who founded schools for the deaf in their countries after the pattern of the Institute in Paris or that in Vienna. So arose the Institutes at Karlsruhe, 1783; Prag, 1786; Munich, 1798; Waitzen, 1802; Freising, 1804; Linz, 1812, etc.

This circumstance of the Manual method receiving imperial sanction in the founding of the Institute in Vienna had a paralyzing effect on the development of the Oral method, which was already practiced by Samuel Heinicke in his Institute at Leipzig in 1778. Although the Oral method was not unknown to many of the German princes, yet it was left neglected by them, partly on account of the imperial example and partly on account of the general enthusiasm for everything foreign at that time. It was only for this reason that the Manual method could affirm its leadership in the German countries up to the middle of the 19th century. Had Emperor Joseph II had the opportunity of seeing the Institute of Heinicke, instead of that of Abbé de l'Epeé, the Oral method would have been brought to its due cultivation, the German method would have reached its present extension 50 years ago, and this method would be the sole ruling method today.

HELPS AND HINDRANCES OF DEAF CHILDREN IN ACQUIRING SPEECH AND LANGUAGE AT THE NATURAL AGE.[1]

By Mary S. Garrett, Philadelphia, Penna.

The foundation "hindrance" to the early training in Speech and Language of deaf children, is in the general misconception of their condition. It is practically taken for granted that because they lack one sense they lack many or all the boundless possibilities of hearing children, when in reality they share them. Quite generally and thoughtlessly they are nurtured in an atmosphere which takes it for granted that they are incapable of doing most things, and this environment gradually stifles the very qualities and capabilities the development of which depends on their healthy growth from infancy.

Prominent among these are speech and language. The deaf baby cries and babbles just as the hearing baby, but once let its relatives discover that it is undisturbed by noises and therefore deaf, they stop the endless repetition of language which they address to the hearing baby when it begins to babble, and to which, impelled by its hereditary tendency to talk, its impulse to imitate and its budding power to acquire language, it gradually and naturally responds. The deaf baby has all these impulses and its lack of hearing is compensated by the ability to acquire language and speech through sight if and only if its attention is always and invariably directed to the mouth of the speaker and not distracted by efforts to convey indefinite ideas by the clumsy motions of the hand. It will then become the habit of its life. Even the deaf children of deaf parents and with many deaf relatives have more hearing ancestors who talked than who did not.

Another "hindrance" to a deaf child's progress is the tendency to spoil him and thus lay the foundation for a future of unhappiness. A wise mother (Mrs. Christine Terhune Herrick) writes, that she "believes in beginning government at birth because she finds that the rudimentary moral faculties are all there." She asks, "Is it

[1]A paper read March 14, 1908, before a meeting of the First International Council of Mothers, in session in Washington, D. C.

kind, is it fair, to leave him untrained in obedience until life teaches it to him by hard knocks? Can any gift do more for him than the gift of self-control?

"When he goes to school he is under a master. When he goes into business he is under an employer. When he attains manhood he must comply with the laws of health, the laws of society, or suffer."

We know that the conditions are the same, so far as the rudimentary elements of growth in plants are concerned. All the beginnings of stem and leaf and flower are contained in the tiny seed, but if the seed is not given the required soil, sun, air and water suited to its best development it cannot attain its possibilities.

The best "helps" to the deaf child acquiring speech and language could be found in its own home and are two-fold. First the child there sees only normal speech to copy and second the chances are that it would be surrounded by more hearing people than deaf people, who should individually take pleasure in showing the deaf child the repetition of language which the hearing child constantly gets through its ears.

The delusion that the deaf child is incapable of responding successfully to these "helps" is, so far, so general that little is attempted in this way.

There are also many deaf children in the homes of the working people where families have not the opportunity to do, for any of their children, many things that would benefit them.

For these reasons we established the Home for the Training in Speech of Deaf Children before they are of school age in Philadelphia, Pennsylvania, and for the same reasons these homes should be established everywhere, where there are deaf children needing them. I desire to sound a vigorous note of warning, however, to any one planning for their foundation (and I trust there are many) against permitting any "hindrances" to creep in and destroy their success.

One vital point is that there should be no interruption, by vacations, of the children's training in speech and language. We had none in our acquiring of them, and their training must have none if it is to be successful.

Another fatal "hindrance" is carrying ideas to the child's brain by motions or by anything except speech.

An indispensable "help" is in teaching the speech and language of every-day life in its natural sequences.

The teaching of writing before the child can talk well enough not to be tempted to use writing in place of speech is a "hindrance." In our Home we live with the children and take our meals with them, which affords constant opportunities for helpful conversation. The children learn, of course, the same plays and games as all children play. We train them to enter schools with hearing children because we think the education of the companionship of hearing children as important in preparing them for life in the hearing world as the school studies. This companionship is equally important later when learning their trades.

Another object in thus segregating them among the hearing for education is to avoid keeping them together through adolescence and adult life which leads so frequently to their marrying each other and propagating deafness.

In attending schools for hearing children the deaf children encounter the same forms of "helps" and "hindrances" that confront the hearing children. There are born teachers, mediocre teachers and poor teachers; there are wise parents and unwise parents and many other factors that are either "helps" or "hindrances."

There are also the same differences in ability in the deaf children as in the hearing; among both are found brilliant, mediocre and dull children.

You, dear members of the Congress of Mothers, with the mutually helpful work you are inaugurating among mothers, your Parents' and Teachers' Associations and your varied efforts to aid children, can and do contribute to the diminution of the "hindrances" and the multiplication of the "helps."

You, delegates to the International Congress on the Welfare of the Child, are doubtless doing effective work for the future citizens of your respective countries.

I am sure that we will all agree that anything that we can do to prevent the increase of the number of deaf children is the best "help" that could possibly be given them.

LADDIE.

By Anna C. Reinhardt, St. Paul, Minn.

In an article published in the Association Review in 1905, I said that Laddie was born deaf and his speech-training began when he was two years old.

I also said that Laddie had hobbies, and these hobbies have been the key-note of his development. At one time it was playing Indian, at another being a "brave soldier," or a railroad engineer, etc., etc.

Every member of the family was always on tip-toe to aid and abet Laddie's schemes. He hammered and sawed for weeks making ships. As these ships came out of the works, they were duly launched and christened with colors flying.

Composition.

"Just now I am a good deal interested in ships. I built a ship myself. Father helped me a little. I am going to make two life-boats for my ship. I am the owner of thirteen boats. Not one of them is covered with barnacles."

Laddie's compositions were nearly always short. On one occasion he stopped in the middle of a composition to talk it out, and when asked why he did not go on writing, he replied: "Don't you know it's much easier to talk than write?"

While his mind was centered on locomotives he visited Baldwin's Locomotive works and was immediately seized with a desire to emulate this great plant. Some day he was going to put up huge buildings and employ hundreds of men.

Composition.

"I am going to have two shifts of men. It's mother's business to pay them.

"One of These Shifts.

"Tin-smiths, wheel-wrights, riveters, shaft makers, painters, glaziers, truck-makers, whistle-smiths, drivers, molders for iron, glass blowers, and carpenters."

Realizing that experience would be necessary, he immediately went to work and built a locomotive of tin, mounting it on the wheels of an old express wagon.

Always a lover of nature, bee keeping proved especially interesting to him. This young Huber was not satisfied until he knew how they built the comb, why they preferred certain flowers, where they carried the pollen, how the hives ought to be made, etc. He pored over books and pamphlets, drew pictures of bees and bee-hives, manufactured brood-frames, honey-boxes, and bee-hives, and spent much time watching his own bees in an observation hive.

The following article written by Laddie was published in "Gleanings in Bee Culture:"

BEES IN A HIVE.

In a hive there are always more than three thousand bees, although I have a colony that has about forty thousand in it.

The Queen.

The queen's business is to lay eggs. She examines every cell that she wants to lay eggs in. She is very particular.

The Worker.

The worker's business is to feed the drones and the babies, build combs, and gather nectar from the flowers. The worker also feeds the queen. The worker is particular, too. The bees will not stay in a hive that smells badly. In the fall the workers kill the drones.

The Drone.

The drone's business is to walk around in the hive with his hands in his pockets and see what is going on there.

Wax.

Wax is made from honey. When the bee wants some wax for her comb she takes a sip of honey, then she takes a nap. When she wakes up she finds her wax pockets full. But she is not surprised. She moistens the wax in her mouth. Then she pushes and pulls and pats till there is a comb.

Comb.

There is a drone comb and a worker comb. I think it is best to have hatching brood in all your hives. I have seven bee-hives full of bees.

Hives.

Hives ought to be made as well as they can be made. You ought to use well-seasoned wood for hive-making. Make your hives very deep. Never have your hives right on the ground. Always have a box under the hive. Have your hives under a tree. A half barrel shade does not do much good. If your hive is being robbed make the door smaller.

Moths, crickets, beetles, butterflies, and every living thing interested him. He had a butterfly net and a poison jar. Many happy hours were spent in his mother's beautiful garden watching the birds and insects. The former he knew by name, while the latter he sometimes caught in his net for examination. When it was necessary, for scientific purposes, to kill a moth or a butterfly, it was dropped into the poison jar with reluctance.

He enjoyed feeling the buzz of bees on the net, and often held a cricket or cicada in his little hand to feel the chirp. Bird's nests were examined with great care, and if by accident the fledgelings were disturbed he was much distressed.

There were always Nature lessons adapted to the months and seasons. In March we talked about the wind, and when Laddie was asked what the wind could do, he replied: "Blow off a boy's hat, fly a kite, sail a ship, dry the clothes, and drive a windmill." He made a weather vane of tin and mounted it on a post. It must be confessed that it was somewhat wobbly, but Laddie's joy knew no bounds if it chanced to point in the right direction.

There probably comes a time in every boy's life when the desire for heroism is uppermost and soldiers or sailors are the heroes, real or imaginary. And this came into Laddie's life rather early. The opportunity was seized and made much of. We had stories day by day of men whose lives were noble examples. Patriotism ran high. Love for his country and love for the stars and stripes often brought forth three rousing cheers. He was glad America was a "freedom country."

When Laddie reached what Professor James calls the "saturation point" he took up the next hobby with the same interest and enthusiasm as he did the ones that had gone before.

"Authoring" was for a time his favorite occupation. He wrote "Stories for Big Boys and Girls" which were, to some extent, reproductions of stories he had read or heard.

At times he soared higher than mere prose writing. Under the caption "Poems and Verse Blank" are found a few attempts at versifying.

"Have you told lise?
Oh, no, no!
Have you eat pise?"

"Little snail, crawl into the shell,
Till you hear the bell."

"Little cricket,
Go through the wicket,
And buy a ticket."

There came a time when Laddie began to wonder about the stars. It was soon after he had been told "The Sweet Story of Old." The Star of Bethlehem led this little trusting soul to wonder at the glory of God, even as it had led the wise men to the manger.

The North Star and the Big Dipper were soon as familiar as the faces of friends; then came Orion, and the Bull, the Twins, the Big Dog and the Little Dog, and so on, till the winter sky was an open book. If he chanced to be out after dark, he heeded not where he was going, but saw only the glory of the moon and stars. A small telescope was in use every evening until bedtime, but the telescopes of his own manufacture were "almost as good as the ones you buy." When told that Mizar was a double star, he confirmed it by looking through his telescope; then found he could see it with the naked eye, and said: "And you can, too, if you will only look long enough."

So much of Laddie's time was spent in the country and he lived close enough to the heart of Nature to understand her secrets. Geography was a delight to him because he understood the "why" of things. When asked how he would explain to a boy that the earth was round, he said: "Take him to Atlantic City and let him see the ships sail out of sight." When he was eight he was taken to Yellowstone Park, and for a year after the trip he spoke of its beauty with the enthusiasm of a Nature lover, and Old Faithful is still one of his dearest friends.

Stories of travel and adventure were for a long time his daily portion. One which he enjoyed intensely was Captain Slocum's "Around the World in the Sloop Spray." "The Adventure of Billy Top-sail" opened his eyes to the dangers of a fisherman's life, as well as to the hardships of life in Newfoundland.

Some members of the family went to South America and Laddie followed them with maps and photographs. He read much about the country then and became interested in its history, its people, and its industries. He learned about the nitrate fields, how coffee and sugar are grown, and wished he might live on a hacienda. He wondered whether the Southern Cross was more beautiful than Orion and wrote the travelers to be sure to visit the observatory at Arequipa.

The stones and rocks in the neighborhood of his country home became subjects of interest. He soon learned the scale of hardness, learned to know the minerals by name, made tests with a test tube and litmus paper, and ended by making a collection of geological specimens which was the beginning of "my museum."

Indian lore was always fascinating to Laddie; he loved their myths, legends, and superstitions. We read portions of Longfellow's "Hiawatha." He caught the rythm, and the Indian names were not too much for him.

His first Bible story was the story of David. He was then not yet six years old, and he loved it. Later, when he was able to read, he enjoyed reading Bible stories as much as any others, and often chose one in preference to some other. "King Arthur" and "Pilgrim's Progress" came when he was nine. For days and weeks he lived these stories and they have surely left a lasting impression.

Dickens, Eugene Field, Hawthorne, Robert Louis Stevenson, and James Whitcomb Riley were all more or less familiar to him before he was ten. In Riley he read the dialect with ease, and enjoyed it as thoroughly as "grown ups" do.

Do I hear you say he is an unusual child? Yes, he is. Indeed, we feel he is a genius who will create his own environment. He has unusual surroundings, too—relatives and friends who encourage his every effort. He is not yet eleven. He swims, rides horseback, dances, works hours at a time at electricity, and does excellent work in modelling, drawing, and painting.

The success he has thus far attained is due to the hearty co-operation of all who love him, but most of all to the Mother, whose hand is at the helm.

THE SIGN-LANGUAGE IN AMERICAN SCHOOLS.

OLOF HANSON, SEATTLE, WASHINGTON.

The following statistics, showing the number of pupils in schools which do, and which do not, recognize and use the sign-language, have been compiled from the Annals for January, 1908, in the same manner as in former years.

In the Annals the various schools are recorded according to methods of instruction used as Combined, Oral, Manual, Manual Alphabet, and Oral-Manual Alphabet. The Combined System schools employ all methods that have been found advantageous in educating the deaf, many of the pupils being taught entirely by speech in the class-room; but it is generally understood that all or nearly all the schools reported in the Annals as Combined recognize and use the sign-language for chapel services, public addresses, lectures, etc., although in many of them it is restricted in or even excluded from the class-room. The Manual schools are similar to the Combined, except that for lack of means or other untoward circumstances, they are unable to give instruction in speech. Manual Alphabet schools use the manual alphabet, but reject the sign-language in and out of the class-room. Those recorded as Oral schools are supposed to exclude both the sign-language and the manual alphabet, although in point of fact this is not strictly the case in some of them. Those classed as Oral-Manual Alphabet are understood to use the Oral and Manual Alphabet methods in separate departments and to exclude the sign-language. The Pennsylvania Institution at Mt. Airy is the only school in the United States at present in this class.

Tabular statement of sign-language in American schools for the deaf from 1900 to 1907, inclusive:

Dates	Sign Language used		Manual Alphabet, but no Sign Language		No Sign Language; no Manual Alphabet		Totals	
	Pupils	P't'ge	Pupils	P't'ge	Pupils	P't'ge	Pupils	P't'ge
1900, Nov. 10..	8645	81.5	196	1.9	1767	16.6	10,608	100
1901, Nov. 10..	8967	81.3	211	1.9	1850	16.8	11,028	100
1902, Nov. 10..	8839	80.7	209	1.8	1904	17.5	10,952	100
1903, Nov. 10..	9048	80.6	210	1.9	1967	17.5	11,225	100
1904, Nov. 10..	9066	80.1	208	1.8	2042	18.1	11,316	100
1905, Nov. 10..	8983	79.2	216	1.9	2145	18.9	11,344	100
1906, Nov. 10..	9227	79.2	198	1.7	2223	19.1	11,648	100
1907, Nov. 10..	9174	78 8	197	1.7	2277	19.5	11,648	100

REPORT ON VISITS TO INSTITUTIONS FOR THE DEAF AND DUMB AND THE BLIND IN AMERICA AND THE BRITISH ISLES.

By Samuel Johnson, Brighton, South Australia.

[The following is the report upon his visit to American and British Institutions, made a year ago, by Mr. Samuel Johnson, Superintendent of the South Australian Institution, at Brighton, near Adelaide. Mr. Johnson was trained as a teacher of the Deaf, we believe, in Ireland, but he has been in his present position for a quarter of a century. His large experience gives his views and deductions weight, and his report will be read with interest. The report is addressed to the Committee of Managers of the Brighton School.—Editor.]

By your kind permission I left Adelaide in January last on a six months holiday for the purpose of acquiring in older countries the latest information on the art of teaching deaf mutes and blind children, and also to visit my relations. After visiting the deaf and dumb institution at Naples, I sailed for New York, and spent the month of March in North America, where I visited fifteen institutions and societies for the education and well-being of the deaf and dumb and the blind. The heartiest reception was accorded me everywhere I went, and the most generous hospitality was bestowed on me. Every facility was afforded me for testing the work, and no pains were spared to further the objects of my mission. I believe the American institutions are the finest and best of their kind in the world. The Gallaudet College and Kendall School for the Deaf at Washington, the Pennsylvania Institution for the Deaf and Dumb at Mount Airy, near Philadelphia, the New York Institution for the Deaf and Dumb at Washington Heights, New York City, the Institution for the Improved Instruction of Deaf Mutes on Lexington Avenue, New York, the New York Institution for the Education of the Blind, and the Volta Bureau at Washington for the increase and diffusion of knowledge relating to the deaf—all of which I visited—are doing a great work. There is much in common between our methods of teaching deaf mutes and the methods of some of the American schools, but their system of teaching the

blind is different to ours. I have learnt much useful knowledge from the American teachers of the deaf, but it will not be necessary to make any drastic changes in our methods. The Americans give a higher education to deaf mutes than we do, but this is not because of any deficiency in our methods or teaching power. They admit young people who lose their hearing at any age up to twenty-one years, and retain them till they are from twenty to twenty-five years of age, in order to teach them trades, while ours leave much earlier, and learn trades in ordinary workshops. We do not admit those who lose their hearing after the age of twelve years if they are able to read and write. In the large institution at Philadelphia, where there are five hundred and twenty pupils, I found that 60% had lost their hearing, while only 25% of ours became deaf after birth. It will be easy to understand that young people who lose their hearing between the ages of seven and twenty-one years are capable of receiving a much higher education than congenital deaf mutes. I do not agree with the Americans in admitting to their institutions young people who, although they may have the misfortune to lose their hearing, are already well educated; neither do I agree with them in teaching trades in the institutions, as I am convinced that the best place for a deaf mute to learn his trade is in the workshop or factory where he will afterwards have to earn his living. Some of the Superintendents of the American Institutions told me that they were compelled to teach trades owing to the restricted number of apprentices allowed in factories through the influence of the trades unions. I have had interviews with Dr. Gallaudet, President of the Deaf Mute College at Washington; Dr. Crouter, Superintendent of the Pennsylvania Institution for the Deaf and Dumb; Mr. W. B. Wait, Emeritus Principal of the New York Institution for the Blind; Mr. E. H. Currier, M. A., Superintendent of the New York Deaf and Dumb Institution; the Hon. John Hitz, Superintendent of the Volta Bureau; Mr. F. W. Booth, Secretary of the American Association for Promoting the Teaching of Speech to the Deaf; the Rev. Dr. Chamberlain, General Manager of the Church Missions to Deaf Mutes of New York, and the Principals of the different Institutions which I visited. The enthusiasm of those gentlemen and their desire to supply me with such information as may benefit the deaf of our country has been an inspiration to me. I investigated the condition of the Adult Blind and Deaf. The blind are greatly neglected after they leave school. I noticed several of them begging on the

streets of Philadelphia, and in the city of New York the great majority of the working blind are out of employment. The well-educated adult deaf are in independent positions, but the poorly educated do not get on well owing to the insufficiency of the Missions. There are only two Missionaries working among the deaf of New York city and the adjacent towns, where there is a deaf population of about five thousand.

I commenced visiting Institutions in the British Isles early in April, and devoted my time up to the 17th of June to the work, with the exception of five weeks which I spent with my wife's relations and my own. I visited twenty-three Institutions and Missions in England and Ireland. With the exception of the Royal Normal College for the blind at Upper Norwood, London, I found no better school in those countries than our own so far as education is concerned, but a few of them are better equipped. Some have fine gymnasiums, excellent bathrooms, and good lavatories, and in most of the class-rooms the seats have backs. There is much diversity of opinion among English teachers of deaf mutes respecting the different systems of teaching. I found in some instances the Oral method confused with the Pure Oral, which forbids the use of signs and finger spelling even on the playgrounds. I am convinced that this system is only suitable for semi-mutes and the semi-deaf. The great majority of congenital deaf mutes consigned to it will fail to receive a good education. The Oral method, which is much broader, is capable of educating about 80% of the deaf and dumb. The senior pupils of schools which are conducted mainly on oral lines, such as the Stoke-on-Trent School, the Jews' Deaf and Dumb Home, London, and the school at Anerley, near the Crystal Palace, are brighter and better educated than pupils of similar classes taught by the manual system in other schools.

The headmasters of the various Institutions visited by me were most courteous, and I desire to record my hearty thanks to them for their kindness and attention.

I had several interviews with the Rev. F. W. G. Gilby, M. A., Superintendent of the London Missions to the Deaf and Dumb, to whom I am greatly indebted for many kindnesses and much information. Mr. Gilby has established preaching places and institutes for adult deaf mutes in the various centers of London. He has two clerical and six lay assistants. The adult deaf of England as a whole do not compare favorably with ours. Many of them are out of work, some are in great poverty, and hundreds of them are in

the workhouses. The Institutes in Ireland are doing quite as good work as those in England, although they receive no state aid, while the English and Scotch Institutions are liberally assisted by the English government. The Roman Catholic Institution at Cabra, near Dublin, which is admirably managed, is doing excellent work.

In the majority of schools visited by me the pupils are divided into two parts—one division taught by the Oral method and the other by the Manual. I purpose at an early date separating those pupils who make little or no progress in speech from the good and fair speakers, and I shall have them instructed entirely by the Manual method. By this classification I hope to improve the speech of our oral pupils. The pupils' speech and lip-reading in the Pennsylvania School are better than ours, while the pupils of the same standing in our school are quite as intelligent and as well educated as theirs. The pupils of the senior classes of the Kendall School, Washington, and of the New York Institution at Washington Heights, both of which are combined system schools, appeared to me as well educated as the pupils of similar classes in oral schools, but the speech of the latter is better than that of the former. Combined system teachers assert that pupils of oral schools are lacking in intelligence, and that many of them are poorly educated when they leave school. These statements will certainly not apply to the Pennsylvania Institution. The intelligence of the pupils of that school is very good, the education throughout the whole establishment is excellent, and the speech and lip-reading are very good, but I noticed that on the playgrounds and generally out of school signs and manual spelling are allowed and are freely used, and I think this concession greatly aids in promoting the mental development and intelligence of the pupils. It must also be remembered that in every deaf mute school in America there is a considerable percentage of semi-mutes, some of whom were well educated before they lost their hearing. In my opinion these raise the intelligence of congenital deaf mutes by constantly associating with them and talking to them. I met with some very badly educated adult deaf mutes in England, and on inquiry found that generally they were the products of pure oral schools. The English method of teaching the blind is the same as that used by us, viz., the Braille. I consider our teachers quite as competent as any I met in England. I saw no male teachers in the mother country who are, in my opinion, better fitted for this work than Messrs. A. C. W. Cox and S. Cooper.

During my trip I visited forty Institutions and Missions, viz., one in Naples, fifteen in America, twenty in England, three in Ireland, and one in Western Australia. The work done in the West Australian Institution is quite as good as that of any Institution for the Deaf and Dumb visited by me in England. I have already held a teachers' meeting with the view of effecting some improvements in our methods. The most pressing requirements at the Institution are new play-rooms, lavatories, and bathrooms, and the forms in the junior class-rooms should have backs fixed on them, and chairs should be provided for the senior pupils. I saw no better class-rooms, nor finer dormitories, nor a more beautiful dining-room than ours in any Deaf and Dumb or Blind Institution. Your Institution is on the whole, when compared with others of its kind, a good school and comfortable home. Moreover, it has made great progress during the short period of thirty years which it has been in existence. Its fine buildings denote material advancement, while the large number of excellent young men and young women who, as a result of their training in our schools, are now in independent circumstances, testify to the soundness of its educational methods.

PROGRAM OF THE EIGHTEENTH MEETING OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF AT THE SCHOOL FOR THE DEAF, OGDEN, UTAH.

General Program.[1]

Saturday, July 4.—Address of welcome and responses. Miscellaneous business. Hour to be determined at the Convention.

Sunday, July 5.—Program to be in the hands of the ministers present.

Monday, July 6.—9:00 a. m.—General Session.—The address of the President, Dr. E. M. Gallaudet; Report of the Committee on "A Uniform Course of Instruction," Supt. Chas. W. Ely, Chairman of Committee, Frederick, Md.; Discussion.

2:00 p. m.—Normal Section.—J. W. Jones, Chairman, Columbus, Ohio.—"The Normal Department, Gallaudet College," by Professor Percival Hall; Discussion.

Monday evening—General Session—Address by Dr. Henry Suzzallo, of Columbia University.

Tuesday, July 7.—9:00 a. m.—General Session.—"The Essential Training for a Teacher of the Deaf," by Mrs. J. Scott Anderson, Principal Swarthmore School and Kindergarten for the Deaf, Swarthmore, Pa.; General discussion: opened by Supt. F. D. Clarke, Flint, Mich., Supt. J. R. Dobyns, Jackson, Miss., Supt. A. L. E. Crouter, Philadelphia, Pa.

2:00 p. m.—Oral Section.—Supt. C. E. White, Chairman, Omaha, Nebraska.—"Status of Oral Work in our Middle West Combined-System Schools, and what can be done to stimulate greater interest in it," by Supt. F. D. Clarke, Flint, Mich.; "The Best Method of Obtaining or Retaining the Natural Voice," by Miss Frances N. Eddy, Boise, Idaho; "The Development of the Five-Slate System," illustrated with a class of pupils by Miss Katherine E. Barry, Colorado Springs, Colo.

Tuesday evening—General Session.—Address by Dr. W. G. Anderson, Yale University.

Wednesday, July 8.—9:00 a. m.—Industrial Section.—Mr. Warren Robinson, Chairman, Delavan, Wis.—Opening Address, by the Chairman; "A Matter of Time and Brains," by Supt. W. K. Argo, Colorado Springs, Colo.; "A Course in Domestic Science," by Elizabeth Maughan, Ogden, Utah; "Operating the Linotype," by L. A. Long, Devils Lake, N. D.; "An Inquiry."

2:00 p. m.—Kindergarten Section.—Program to be supplied by Supt. R. O. Johnson, Chairman, Indianapolis, Indiana.

Thursday, July 9.—9:00 a. m.—Normal Section.—Address, 15 mins., "Ethics in the Education of the Deaf," by Francis H. E. O'Donnell, Berkeley, California; Address, 15 mins., "The Backward and Feeble-Minded Deaf," by Supt. L. E. Milligan, Boulder, Montana; Address, 15 mins., "Less Text-Book, More Teacher," by Mr. T. C. Forrester, Boulder, Montana.

[1] The program as here published is subject to revision before the meeting of the Convention.

2:00 p. m.—Oral Section.—"Speech-Reading in the Lower Grades," by Miss Nora V. Long, Indianapolis, Ind.; "Arithmetic for Primary Classes," demonstrated with an oral class from the Utah School, by Miss Idella Walton, Jacksonville, Ill.; "Oral Work in Advanced Grades," by Miss Clara Louise Finlay, Council Bluffs, Iowa; Discussion led by Miss Amelia De Motte, Indianapolis, Ind.; "The Normal Course for Teachers at Northampton," by Miss Margaret J. Stevenson, Olathe, Kans.

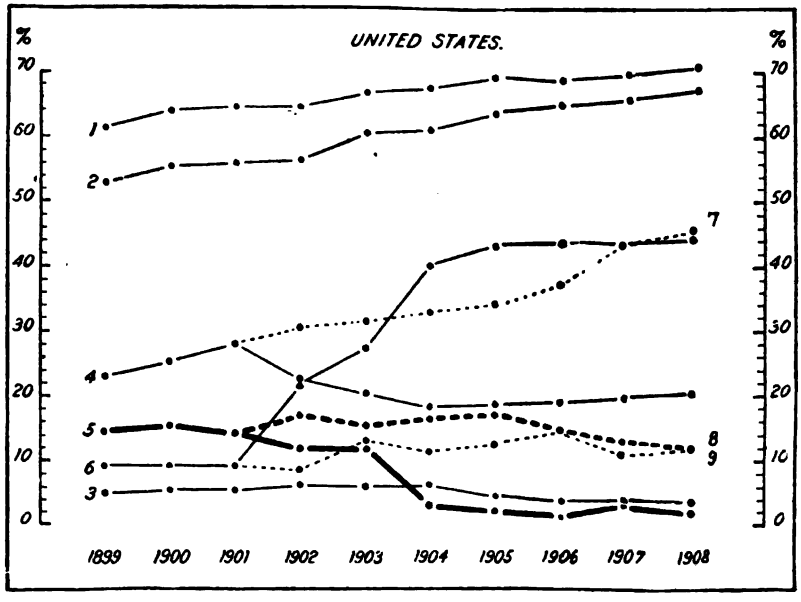
Friday, July 10.—9:00 a. m.—Industrial Section.—Mr. Warren Robinson, Chairman, Delavan, Wis.—"Dairying at the Mississippi School for the Deaf," by Supt. J. R. Dobyns, Jackson, Miss.; "Industrial and Agricultural Libraries in Schools for the Deaf," by W. A. Schneider, Vancouver, Wash.; "Do Pupils Follow up and Make a Livelihood out of the Trades they Learn at School?" by Alex. L. Pach, New York, N. Y.; "A Question of Compensation," by Supt. E. W. Walker, Delavan, Wis.; "The American Industrial Journal," by the Chairman.

2:00 p. m.—Aural Section.—Principal E. H. Currier, Chairman, New York City. 1. Reports from Schools responding to circular issued February 17, 1908; 2. "Report of Aural Work in the Columbia Institution," Professor Percival Hall, Washington, D. C.; 3. "Development of Latent Hearing in an Apparently Deaf Child in the Kendall School," by Miss Elizabeth Peet, Washington, D. C.; 4. "Development of Ralph Wooden, of the Colorado School," by Miss Ida M. Donald, Colorado Springs, Colo.; 5. Paper by Miss Elsie M. Steinke, Delavan, Wis.

Friday evening—Art Section.—Mr. W. A. Jordan, Chairman, Jackson, Miss.—"Art and Education," by the Chairman; Discussion by Dr. A. L. E. Crouter, Dr. J. R. Dobyns, Mr. E. A. Gruver, Mr. Harris Taylor, Mr. Charles P. Gillett, and others; "Drawing as a Means of Expression," by Mr. Max W. Woodbury, Ogden, Utah; "Training of the Hand and Eye," by Mr. Hiram Powers, New York City; Discussion by Mr. Arthur Bryant, Mrs. O. A. Betts, Weston Jenkins, Mrs. T. H. Coleman, and others; "Designing for the Deaf," by Mrs. Gabrielle Le Prince, New York City; Discussion by Mr. Ernest Zell, Mr. Theophilus d'Estrella, Miss Ethel M. Crawford, Miss A. Leverett, J. B. Bumgardner, and others; "Architecture," by Mr. Olof Hansen, Seattle, Washington; "Specializing in Art," by Mrs. Sylvia C. Balis, Belleville, Ontario; "The Deaf in Art," by Mr. W. A. Caldwell, Berkeley, California, and Dr. Robert Patterson, Columbus, Ohio.

Saturday, July 11.—9:00 a. m.—General Session.—Miscellaneous business.

J. W. JONES,
Chairman of the Committee on Program.



NUMBER OF PUPILS.

Year	Taught Speech	Speech Used	Not Used†	Taught by Speech			Schoolroom Usage		
				S	SS‡	SSS‖	S	SS‡	SSS‖
	1	2	3	4	5	6	7	8	9
1890.....	6460	5584	535	2496	1549	975			
1900*.....	6884	5969	582	2757	1643	995			
1901.....	7131	6167	621	3020	1611	1009			
1902.....	7164	6276	712	2506	1323	2412	3100	1903	938
1903.....	7561	6793	645	2331	1364	3098	3552	1754	1487
1904.....	7578	6858	720	2050	305	4503	3715	1854	1289
1905.....	7994	7373	621	2153	278	4942	3911	2038	1424
1906.....	8145	7679	466	2279	252	5148	4274	1682	1723
1907.....	8320	7852	468	2359	393	5100	5067	1521	1264
1908.....	8451	8010	441	2412	304	5294	5389	1304	1317

PERCENTAGE OF PUPILS.

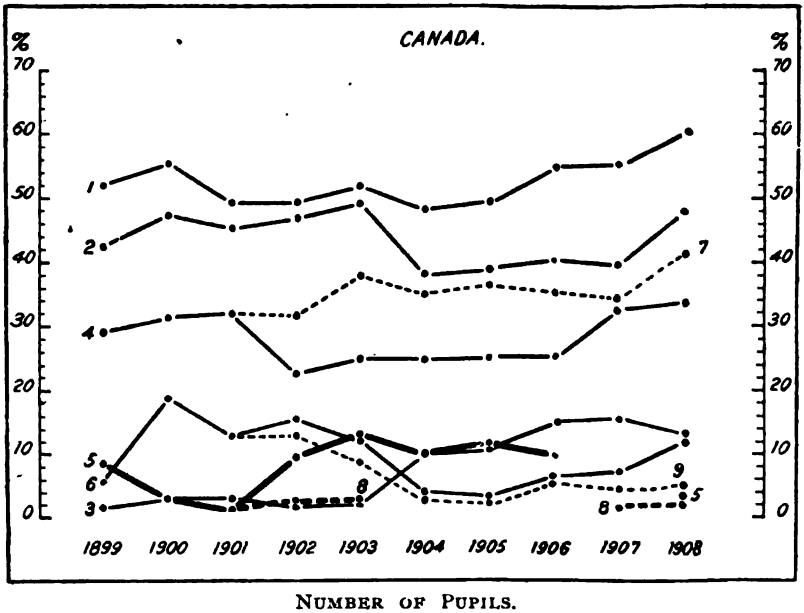
1899.....	61.4	53.1	5.1	23.7	14.7	9.2			
1900.....	64.0	55.5	5.4	25.7	15 3	9.2			
1901.....	64.7	56.0	5.6	27.4	14.6	9.2			
1902.....	64.7	56.7	6.4	22.6	12.0	21.8	30.6	17.2	8.5
1903.....	67.2	60.3	5.8	20.0	12.1	27.4	31.5	15.6	13.2
1904.....	67.3	60-9	6.4	18.2	2.7	40.0	33.0	16.5	11.4
1905.....	69.1	63.7	5.4	18.6	2.4	42.7	33 8	17.6	12.3
1906.....	69.0	65.0	4.0	19.3	2.1	43.6	36.2	14.2	14.6
1907.....	70.1	66.1	4.0	19.9	3.3	42.9	42.7	12.8	10.6
1908.....	70.9	67.2	3.7	20.2	2.6	44.4	45.2	11.0	11.0

*For corrected Table for 1900, see Vol. II, p. 549. †Column 3, "not used," includes all cases where it is not known that speech is used as a means of instruction. ‡Columns 5 and 8 include unclassified cases taught by SS. ‖Columns 6 and 9 include unclassified cases taught by SSS.

KEY TO SPEECH DIAGRAMS.

The diagrams represent graphically the percentage of pupils taught speech in schools for the deaf in the United States and Canada, according to the statistics which have been gathered annually by the REVIEW since 1899. The figures on which the diagrams are based are given in each case immediately under them and the columns are numbered to correspond to the curves upon the diagrams.

1. Total taught Speech. (*Summation of all cases.*)
2. Speech *used* as a means of instruction (*with or without Spelling or Sign-language*).
3. Taught Speech, but Speech *not used* as a means of instruction.



NUMBER OF PUPILS.

Year	Taught Speech	Speech Used	Not Used	Taught by Speech			Schoolroom Usage		
				S	SS	SSS	S	SS	SSS
	1	2	3	4	5	6	7	8	9
1899.....	404	330	14	225	64	41			
1900.....	434	411	23	247	20	144			
1901.....	384	361	23	251	8	102			
1902.....	393	377	16	180	75	122	250	20	107
1903.....	387	367	20	183	93	91	283	21	63
1904.....	354	282	72	179	75	28	259	—	23
1905.....	346	273	73	174	76	23	255	—	18
1906.....	408	296	112	183	69	44	254	—	42
1907.....	421	301	120	246	—	55	259	8	34
1908.....	487	386	101	271	22	93	333	13	40

PERCENTAGE OF PUPILS.

1899.....	52.1	42.6	1.8	29.0	8.3	5.3			
1900.....	55.4	52.5	2.9	31.5	2.6	18.4			
1901.....	48.8	45.9	2.9	31.9	1.0	13.0			
1902.....	49.2	47.2	2.0	22.6	9.4	15 3	31.4	2.6	13.4
1903.....	51.8	49.1	2.7	24.5	12.4	12.2	37.8	2.8	8.4
1904.....	48.2	38.4	9.8	24.4	10.2	3.8	35.3	—	3.1
1905.....	49.5	39.1	10.4	24.9	10.9	3.3	36.5	—	2.6
1906.....	55.4	40.2	15.2	24.8	9.4	6.0	34.5	—	5.7
1907.....	55.7	39.8	15.9	32.5	—	7.3	34.2	1.1	4.5
1908.....	60.0	47.5	12.5	33.4	2.7	11.4	41.0	1.6	4.9

KEY TO SPEECH DIAGRAMS—CONTINUED.

MEANS OF INSTRUCTION IN SCHOOL AND OUTSIDE.

4. Taught by Speech (*no Spelling, no Sign-language*).
5. Taught by Speech and Spelling (*no Sign-language*).
6. Taught by Speech, Spelling, and Sign-language.

SCHOOLROOM USAGE.

(Without reference to outside instruction.)

7. Taught by Speech (*no Spelling, no Sign-language*).
8. Taught by Speech and Spelling (*no Sign-language*).
9. Taught by Speech, Spelling, and Sign-language.

TABLE I.—SCHOOLS FOR THE DEAF IN THE UNITED STATES.

Arranged alphabetically according to location.

State or Territory	Town	Street or District	Official Name of School	Chief Executive Officer
Alabama	Talladega		Alabama School for the Deaf	Joseph H. Johnson, M. A.
Arkansas	Little Rock		Arkansas Deaf-Mute Institute	Arthur G. Mashburn.
California	Berkeley		California Institution for the Deaf and the Blind	W. Wilkinson, M. A., L. H. D.
do	Los Angeles		Los Angeles Day-School for the Deaf	Mary E. Bennett.
do	Oakland	Seventeenth and West Sts.	Oakland Oral Public School for the Deaf	Charlotte Louise Morgan.
do	do	Telegraph Ave., No. 4002	St. Joseph's School for the Deaf	Sister M. Valeria.
do	Sacramento	Twenty-seventh and G Sts.	Scramento Day-School for the Deaf	Alice Jenkins.
do	San Francisco	Grove St., near Larkin	San Francisco Day-School for the Deaf	Mrs. Jennie B. Holden.
Colorado	Col. Springs		Colorado School for the Deaf and the Blind	W. K. Argo, M. A., LL. D.
Connecticut	Hartford		American School for the Deaf	Job Williams, M. A., L. H. D.
do	Mystic		Mystic Oral School for the Deaf	Jane and Elleanor B. Worcester.
Dist. Columbia	Washington	Kendall Green	Columbia Institution for the Deaf and Dumb	E. M. Gallaudet, Ph. D., LL. D.
			Comprising { The Kendall School for the Deaf	James Denison, M. A.
			Comprising { and Gallaudet College	E. M. Gallaudet, Ph. D., LL. D.
Florida	St. Augustine		Florida School for Blind, Deaf, and Dumb	A. H. Walker, B. A.
Georgia	Cave Spring		Georgia School for the Deaf	Wesley O. Connor.
Idaho	Boise		Idaho State School for the Deaf and the Blind	James Watson.
Illinois	Aurora	Center School	Aurora Day-School for the Deaf	Maggie Neel Proctor.
do	Carpenterville		Dundee Day-School for the Deaf	Mary J. Loar.
do	Chicago	Ashland and Wabansia Sts.	Burr Public Day-School for the Deaf	Mary T. McCowen.
do	do	Ashland and West 13th Sts.	Clarke Public Day-School for the Deaf	
do	do	Chestnut and N. State Sts.	Ogden Public Day-School for the Deaf	
do	do	Edgewood Ave. & Catalpa Ct.	Darwin Public Day-School for the Deaf	
do	do	46th St. and Hermitage Ave.	Seward Public Day-School for the Deaf	
do	do	Harrison, near Halstead St.	Dore Public Day-School for the Deaf	
do	do	Ingleside Ave. and 54th St.	Kozminski Public Day-School for the Deaf	
do	do	Rockwell St. n'r Fullerton Ave.	Goethe Public Day-School for the Deaf	
do	do	67th St. and Stewart Ave.	Normal Practice Public Day-School for the Deaf	
do	do	31st and Loomis Sts.	Holden Public Day-School for the Deaf	
do	do	21st Place and California Ave.	Hammond Public Day-School for the Deaf	
do	do	21st and Robey Sts.	Froebel Public Day-School for the Deaf	

do	do	South May St., No. 409	Ephpheta School for the Deaf	Margaret Cosgrove.
do	do	Yale Ave., No. 6550	McCowen Oral School for Young Deaf Children	Cornelia D. Bingham.
do	Jacksonville		Illinois School for the Deaf	Charles P. Gillett.
do	Moline		Moline Day-School for the Deaf	Ettie Belle Root.
do	Rock Island	7th Ave. and 22d St	Rock Island Day-School for the Deaf	Meta C. Wittig.
Indiana	Indianapolis		Indiana State School for the Deaf	Richard Otto Johnson.
Iowa	Council Bluffs		Iowa School for the Deaf	Henry W. Rothert.
Kansas	Olathe		Kansas School for the Deaf	H. C. Hammond, M. A.
Kentucky	Danville		Kentucky School for the Deaf	Augustus Rogers, M. A.
Louisiana	Baton Rouge		Louisiana Inst. for Ed. of Deaf and Dumb	S. T. Walker, M. A.
do	Chinchuba	St. Tammany Parish	Deaf-Mute Inst. of the Holy Rosary	Sister M. Athanasia.
Maine	Portland	Spring St., Nos. 79 to 85	Maine School for the Deaf	Elizabeth R. Taylor.
Maryland	Baltimore	Hollins St., Nos. 851 to 853	F. Knapp's Institute	Wm. A. Knapp.
do	do	McCulloh St., No. 903	St. Francis Xavier's School for the Deaf	Rev. Mother M. Benedict.
do	Frederick City		Maryland School for the Deaf and Dumb	Chas. W. Ely, M. A., L. H. D.
do	Parkville		Maryland School for the Colored Blind and Deaf	J. F. Bledsoe, Supt., Lyman Steed, Res. Prin.
Massachusetts	Beverly	113 Elliot St.	New England Industrial School for the Deaf	Oakley M. Bockée.
do	Boston	Newbury St., No. 178	Horace Mann School	Sarah Fuller.
do	Northampton		Clarke School for the Deaf	Caroline A. Yale, LL. D.
do	Randolph	North Main St.	Boston School for the Deaf	Rev. Thomas Magennis.
do	West Medford	Woburn St., No. 93	Sarah Fuller Home for Little Deaf Children	Eliza L. Clark.
Michigan	Bay City		Bay City Day-School for the Deaf	Mrs. Caroline Shaw.
do	Calumet		Calumet Day-School for the Deaf	Frances Dewar.
do	Detroit	Second and Porter Sts.	Detroit Day-School for the Deaf	Gertrude Van Adestine.
do	Flint		Michigan School for the Deaf	F. D. Clarke, M. A., C. E., L. H. D.
do	Grand Rapids		Grand Rapids Day-School for the Deaf	Martha M. Hill.
do	Iron Mountain		Iron Mountain Day-School for the Deaf	Anna M. Trondsen.
do	Ironwood		Ironwood Day-School for the Deaf	Tillie Walden.
do	Ishpeming		Ishpeming Day-School for the Deaf	Jessie Banford.
do	Kalamazoo		Kalamazoo Day-School for the Deaf	Alice M. Robie.
do	Manistee		Manistee Day-School for the Deaf	Harriet I. Sanford.
do	Marquette		Marquette Day-School for the Deaf	Maria P. Templeton.
do	Menominee		Menominee Day-School for the Deaf	May M. Howlett.
do	North Detroit		Evangelical Lutheran Deaf-Mute Institute	Rev. William Gielow, B. A.
do	Saginaw		Saginaw Day-School for the Deaf	Etta E. MacFarlane.
do	Sault Ste. Marie		Sault Ste. Marie Day-School for the Deaf	Jessie L. Thew.

State or Territory	Town	Street or District	Official Name of School	Chief Executive Officer
Michigan	Traverse City		Traverse City Day-School for the Deaf	Margaret L. Mayberry.
Minnesota	Faribault		Minnesota School for the Deaf	James N. Tate, M. A., LL. D.
Mississippi	Jackson		Mississippi Inst. for Ed. of Deaf and Dumb	J. R. Dobyns, M. A., LL. D.
Missouri	Fulton		Missouri School for the Deaf	Noble B. McKee, M. A., Ph. D.
do	St. Louis	Cass Ave., No. 1849	Mariae Consilii School for the Deaf	Sisters of St. Joseph.
do	do	Henrietta St., No. 3435	Gallaudet School	Rev. James H. Cloud, M. A.
do	S. St. Louis	9801 So. Broadway	St. Joseph's Institute for the Deaf	Sister M. Alphonsus.
Montana	Boulder		Montana School for the Deaf and the Blind	L. E. Milligan, M. A.
Nebraska	Omaha		Nebraska Institute for the Deaf and Dumb	Cyrus E. White, M. A.
New Jersey	Trenton		New Jersey School for the Deaf	John P. Walker, M. A.
New Mexico	Sante Fe		New Mexico Asylum for the Deaf and Dumb	W. O. Connor, Jr., M. A.
New York	Albany	Pine Hills	Albany Home Sch. for Oral Instr. of the Deaf	Mary McGuire.
do	Brooklyn	113 Buffalo Ave	Branch of St. Joseph's Inst. for the Improved Instruction of Deaf-Mutes	Mary A. Kennedy.
do	Buffalo	Edward St., No. 125	Le Couteulex St. Mary's Inst. for the Improved Instruction of Deaf-Mutes	Sister Mary Anne Burke
do	Fordham	East 188th St., No. 772	Branch of St. Joseph's Inst. for the Improved Instruction of Deaf-Mutes	N. Frances O'Connor.
do	Malone		Northern New York Institution for Deaf-Mutes	Edward C. Rider.
do	New York	904 Lexington Ave	New York Inst. for Im'd Inst'n of Deaf-Mutes	E. A. Gruver, B. A.
do	do	Washington Heights	New York Inst. for Instr. of Deaf and Dumb	Enoch Henry Currier, M. A.
do	do	534 W. 187th St	Reno Margulies School for Children with Defective Hearing	Mrs. A. Reno Margulies.
do	do	1 and 2 Mt. Morris Park, W	Wright Oral School	John D. Wright, M. A.
do	Rochester	North St. Paul St., No. 945	Western New York Inst. for Deaf-Mutes	Z. F. Westervelt, LL. D.
do	Rome		Central New York Inst. for Deaf-Mutes	Edward Perkins Clarke, M. A.
do	Westchester		Branch of St. Joseph's Inst. for the Improved Instruction of Deaf-Mutes	Ellen E. Cloak.
North Carolina	Morganton		North Carolina School for the Deaf and Dumb	E. McK. Goodwin, M. A.
do	Raleigh		North Carolina School for the Blind and Deaf	John E. Ray, M. A.
North Dakota	Devils Lake		School for the Deaf and Dumb	Dwight F. Bangs.
Ohio	Ashtabula	Division Street	Ashtabula Day-School for the Deaf	Mrs. Rosa Keeler.

do	Cincinnati	Grand and Morris Sts	Miss Breckinridge's School	Mary S. Breckinridge.
do	... do	East Sixth St	Notre Dame School for the Deaf	Sister Mary of the Sacred Heart.
do	... do	719 West Sixth St	L. S. Fechheimer Sch. for Promotion of Speech and Hearing	Virginia A. Osborn.
do	Cleveland	2380 E. 55th St	Cleveland Day-School for the Deaf	Grace C. Burton, M. A.
do	Columbus		Ohio Inst. for the Education of Deaf and Dumb	J. W. Jones, M. A.
do	Dayton	1st and St. Clair Sts	Dayton School for the Deaf	Nannie C. Kennedy.
Oklahoma	Guthrie		Oklahoma School for the Deaf	R. N. Dunham.
Oregon	Salem		Oregon School for Deaf-Mutes	Edward S. Tillinghast, B. A.
Pennsylvania	Edgewood P'k		West. Penna. Inst. for the Instruction of the Deaf and Dumb	William N. Burt, M. A., Ph. D.
do	Philadelphia	Belmont and Monument Aves	Home for the Training in Speech of Deaf Children before they are of School Age	Mary S. Garrett.
do	... do	Mount Airy	Pennsylvania Institution for the Deaf and Dumb	A. L. E. Crouter, M. A., LL. D.
do	Scranton		Pennsylvania Oral School for the Deaf	Kate H. Fish.
do	Swarthmore	Chester R'd and Ogden Ave	Swarthmore School and Kindergarten for the Deaf	Mrs. J. Scott Anderson.
Rhode Island	Providence	520 Hope St	Rhode Island Institute for the Deaf	Edwin G. Hurd, M. A.
South Carolina	Cedar Spring		S. Carolina Inst. for the Education of the Deaf and the Blind	Newton F. Walker.
South Dakota	Sioux Falls		South Dakota School for Deaf-Mutes	James D. McLaughlin.
Tennessee	Knoxville		Tennessee Deaf and Dumb School	Thomas L. Moses.
Texas	Austin		Deaf, Dumb and Blind Inst. for Colored Youth	H. S. Thompson.
do	... do		Texas Deaf and Dumb Asylum	J. H. W. Williams.
Utah	Ogden		Utah State School for the Deaf and the Blind	Frank M. Driggs.
Virginia	Staunton		Virginia School for the Deaf and the Blind	William A. Bowles.
Washington	Seattle		Seattle Day-School for the Deaf	M. Ina Smith.
do	Vancouver		Washington State School for Deaf and Blind	Thomas P. Clarke.
West Virginia	Romney		West Virginia School for Deaf and Blind	James T. Rucker.
Wisconsin	Antigo		Antigo Day-School for the Deaf	Blanche E. Argyle.
do	Appleton		Appleton Day-School for the Deaf	Hannah I. Gardner.
do	Ashland		Ashland Day-School for the Deaf	Margaret Clowry.
do	Black R'r F'lls		Black River Falls School for the Deaf	Kathryn E. Cole.
do	Bloomington		Bloomington Day-School for the Deaf	Katharine F. Reed.
do	Delavan		Wisconsin State School for the Deaf	E. W. Walker.
do	Eau Claire		Eau Claire Day-School for the Deaf	Jennie C. Smith.
do	Fond du Lac		Fond du Lac Day-School for the Deaf	Anna Sullivan.
do	Green Bay		Green Bay Day-School for the Deaf	M. Stella Flatley.

State or Territory	Town	Street or District	Official Name of School	Chief Executive Officer
Wisconsin	La Crosse		La Crosse Day-School for the Deaf	Mrs. Elizabeth H. Irish, B. A.
do	Marinette	Main St., No. 1532	Marinette Day-School for the Deaf	Mary Zassenhaus.
do	Milwaukee	Seventh and Prairie Sts.	Milwaukee School for the Deaf	Frances Wettstein.
do	New London		New London Day-School for the Deaf	Carrie H. Archibald.
do	Oshkosh		Oshkosh School for the Deaf	Anna Nugent.
do	Platteville		Platteville Day-School for the Deaf	Matie B. Gamble.
do	Racine		Racine Day-School for the Deaf	Katherine C. Grimes.
do	Rice Lake		Rice Lake Day-School for the Deaf	Katharine Fulton.
do	St. Francis		St. John's Institute for Deaf-Mutes	Rev. M. M. Gerend.
do	Sheboygan		Sheboygan Day-School for the Deaf	Etta M. Golden.
do	Sparta		Sparta Day-School for the Deaf	Charlotte Shermer.
do	Stevens Point		Stevens Point Day-School for the Deaf	Pearl E. Tompkins.
do	Wausau		Wausau Day-School for the Deaf	Margaret Hurley.
do	West Superior		Superior Day-School for the Deaf	Delia C. Page.

CANADIAN SCHOOLS.

Manitoba	Winnipeg		Institution for the Deaf and Dumb	D. W. McDermid.
New Brunsw'k	St. John	Lancaster Heights	New Brunswick School for the Deaf	Jos. Keating.
Nova Scotia	Halifax		Halifax Institution for the Deaf and Dumb	James Fearon.
Ontario	Belleville		Ontario Institution for the Deaf and Dumb	Chas. B. Coughlin, M. D.
Quebec	Montreal	St. Denis St., No. 595	Catholic Female Deaf and Dumb Institution	Sister Marie Rose.
do	... do	Ville St. Louis, N. Montreal	Catholic Male Deaf-Mute Inst. for the Province of Quebec	Rev. J. M. Cadieux, C. S. V.
do	... do	Notre Dame de Grace St.	Mackay Inst. for Prot. Deaf-Mutes and Blind	Mrs. Harriet E. Ashcroft.

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TABLE III.—SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF.—MARCH 10, 1908.

General Summary	United States		Canada	
	No. of Pupils	Per cent of Pupils	No. of Pupils	Per cent of Pupils
Total Pupils	11917	100.0	811	100.0
Taught Speech	8451	70.9	487	60.0
Not taught Speech	3466	29.1	324	40.0
Taught Speech:				
Speech used as means of instruction	8010	67.2	386	47.5
Speech not used as means of instruction	347	2.9	101	12.5
Not stated (whether used or not)	94	0.8	—	—
Speech used as means of instruction:				
In Schoolroom— Outside—				
S — S	2412	20.2	271	33.4
S — SS	43	0.4	18	2.2
S — SSS	2934	24.6	44	5.4
SS — SS	261	2.2	4	0.5
SS — SSS	1043	8.8	9	1.1
SSS — SSS	1086	9.1	40	4.9
Unclassified — SSS	231	1.9	—	—

Symbols employed in above Table:

S Speech (*no Spelling, no Sign-language*).
SS Speech and Spelling (*no Sign-language*).
SSS Speech, Spelling, and Sign-language.

TABLE IV.—SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF.—MARCH 10, 1908.

Means of Instruction in School and Outside (See diagrams, pp. 288 and 289)				United States		Canada	
				No. of Pupils	Per cent	No. of Pupils	Per cent
Diagrams	Schoolroom	Outside					
	S	S					
Line 4			Total S...	2412	20.2	271	33.4
	S	SS					
	SS	SS					
Line 5			Total SS..	304	2.6	22	2.7
	S	SSS					
	SS	SSS					
	SSS	SSS					
	Unclass.	SSS					
Line 6			Total SSS	5294	44.4	93	11.4

TABLE V.—SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF.—MARCH 10, 1908.

Schoolroom Usage without reference to outside instruction (See diagrams, pp. 288 and 289)				United States		Canada	
				No. of Pupils	Per cent	No. of Pupils	Per cent
Diagrams	Schoolroom	Outside					
	S	S					
	S	SS					
	S	SSS					
Line 7			Total S...	5389	45.2	333	41.0
	SS	SS					
	SS	SSS					
Line 8			Total SS..	1304	11.0	13	1.6
	SSS	SSS					
	Unclass.	SSS					
Line 9			Total SSS.	1317	11.0	40	4.9

Symbols employed in above Tables:

S Speech (*no Spelling, no Sign-language*).
SS Speech and Spelling (*no Sign-language*).
SSS Speech, Spelling, and Sign-language.

The above statistics (Tables II, III, IV, and V) have been compiled from replies to the following queries:

Query 1. SPEECH (without spelling or sign-language) used both in the school-room and outside, with.....pupils.

Query 2. SPEECH (without spelling or sign-language) used in the school-room; but SPELLING (without sign-language) also used outside in chapel exercises, work-shop instruction, etc., with.....pupils.

Query 3. SPEECH (without spelling or sign-language) used in the school-room; but SPELLING and SIGN-LANGUAGE also used outside in chapel exercises, work-shop instruction, etc., with.....pupils.

Query 4. SPEECH and SPELLING (without sign-language) used both in the school-room and outside, with.....pupils.

Query 5. SPEECH and SPELLING (without sign-language) used in the school-room; but SIGN-LANGUAGE also used outside in chapel exercises, work-shop instruction, etc., with.....pupils.

Query 6. SPEECH, SPELLING, and SIGN-LANGUAGE used both in the school-room and outside, with.....pupils.

Query 7. Number taught ARTICULATION without speech being used as a means of instruction (their general education being carried on by silent methods).....pupils.

Query 8. Number taught by silent methods alone, without being taught articulation or speech.....pupils.

Query 9. Number of pupils in this school March 10, 1908: Total, ...pupils.

NOTES.

(1) Little Rock School (Ark.): Mr. A. G. Mashburn, the Superintendent, writes: "The 117 under Query 3 include 14 taught entirely by the auricular method."

(2) Dr. Job Williams, the Principal, writes: "With a large part of these pupils [49 under Query 6] signs are used only to a *very* limited degree." Also: "These pupils [24 under Query 8] are taught chiefly by spelling and writing."

(3) and (4) Washington, Gallaudet College and Kendall School (D. C.): No information received. Statistics compiled from the statistics given in the American Annals of the Deaf of January, 1908.

(5) Cave Spring School (Ga.): Mr. W. O. Connor, the Principal, reports 124 white and 35 negro pupils, or 159 in all. He writes, speaking of the 35 negro pupils: "None of them are taught speech systematically. A few who lost hearing or have partial speech are taught, but not systematically."

(6) Indianapolis School (Ind.): Mr. Richard O. Johnson, the Superintendent, writes that the 155 pupils entered under Query 3 include 4 classes or 44 kindergarten pupils.

(7) Olathe School (Kansas): Mr. H. C. Hammond, the Superintendent, writes: "We have 9 oral classes; signs are not used in those except in cases of need. But to claim that they are *not* used would not be strictly correct. Spelling used everywhere, and chapel exercises carried on by both spelling and signs."

(8) Baltimore, Hollins St. School (Md.): Statistics from the ASSOCIATION REVIEW of June, 1907. See Note in that number, page 382.

(9) Frederick School (Md.): Mr. Chas. W. Ely, the Principal, writing of the pupils taught speech, says: "It should be added that speech is largely used with very many of these pupils out of school."

(10) Flint School (Mich.): No information received. Statistics compiled from the statistics given in the American Annals of the Deaf of January, 1908.

(11) Jackson School (Miss.): Dr. J. R. Dobyns, the Superintendent, reports 162 pupils in school March 10, 1908, but does not give the number taught speech. Of the speech teaching done in the school he writes: "Pupils of the first and second years are taught by 'Speech,' without signs, as far as possible. Such pupils as succeed in 'speech' and 'lip-reading' are continued in classes taught by speaking teachers. Signs are forbidden in all class-rooms except as a last resort in explaining the meaning of words. We endeavor to have all communication, outside the 'speech-classes' and the chapel, by means of spelling or 'speech.' In chapel and public lectures signs are used with all freedom." Statistics used in the table from the ASSOCIATION REVIEW of June, 1905.

(12) and (13) Brooklyn and Fordham Schools (N. Y.): The 99 and 117 pupils, respectively, of these two schools are entered under Query 3 with the words "and Writing" inserted, making the Query read: "Speech *and Writing* used in the school-room," etc.

(14) Malone School (N. Y.): No information received. Statistics from the ASSOCIATION REVIEW of June, 1907.

(15) New York, Washington Heights, School (N. Y.): Mr. Enoch Henry Currier, the Principal, writes: "All the pupils are taught speech; not to selected pupils, as Mr. Addison reports," [in his report of his visit to American schools, published in the February, 1908, number of the ASSOCATION REVIEW.] "That has not been done for fifteen years." Mr. Currier adds: "I could put, so far as teachers go, a great many of my pupils under number 1, but the pupils themselves would use signs, as they do in every school, and therefore, for absolute exactness, I prefer to use, 3, 5, and 6."

(16) Rochester School (N. Y.): Dr. Z. F. Westervelt, the Superintendent, interlines between Queries 7 and 8: "No pupils taught or allowed to communicate by silent methods."

(17) Westchester School (N. Y.): The 215 pupils of the school are entered under Query 5 with the word "Writing" inserted, making the Query read: "Speech, *Writing*, and Spelling used in the school-room," etc.

(18) Cincinnati, W. 6th St., School (Ohio): Miss Virginia A. Osborn, the Principal, states that the Board of Education having done away with the manual school as a separate school, the four pupils still under manual instruction are taught in the Frechheimer school, under the charge of their former teacher, Miss Fesenbeck.

(19) Salem School (Ore.): Mr. E. S. Tillinghast, the Superintendent, referring to Query 5, writes the following foot-note: "Query 5. 'Without sign language' is understood to mean the absolute and complete exclusion of signs. About three-fourths of the chapel lectures are spelled, and in both oral and manual school-rooms few signs are used, and in other departments the use of signs is being constantly more restricted."

(20) Knoxville School (Tenn.): No information received. Statistics from the ASSOCIATION REVIEW of June, 1907.

(21) Ogden School (Utah): Mr. Frank M. Driggs, the Superintendent, adds the following note: "Ninety per cent of our pupils are taught speech; 72 per cent are oral pupils; 54 per cent are taught wholly by oral methods, and 26 per cent by manual-oral methods. We have one manual, two manual-oral, and five oral classes. We use speech and writing in oral classes, spelling and writing in manual classes, and speech, spelling, and writing in manual-oral classes. Signs are not used in the school-rooms. Spelling is used in the chapel and everywhere, but not to the total exclusion of signs."

(22) St. John School (N. B.): Statistics from the ASSOCIATION REVIEW of June, 1907. The following report, received too late for use in the tables, was sent by Mr. Jos. Keating, Acting Principal: 1, 0; 2, 0; 3, 0; 4, 0; 5, 0; 6, 0; 7, 6; 8, 30; 9, 36.

THE MELVILLE BELL MEMORIAL DEPARTMENT.

THE BELL SYMBOLS IN CHINESE.

On the following pages we present fac-simile reproductions in Bell Symbols of the title page and first page of a printed folio volume recently unearthed by the late Mr. Hitz from the archives of the Volta Bureau, where it had been reposing for many years. On the cover is marked in his handwriting:

Chinese Spoken Language
Printed
in China in Visible Speech Symbols.

This, he said, was all he knew of it. He did not know how it came into the possession of the Bureau, who wrote it, or what it was about, except that he was under the impression that it was a translation of some portion of the Scriptures.

These fac-similes were to have appeared in our April issue, but were crowded out by other matter. Meanwhile the book remained in Dr. Alexander Graham Bell's house. At one of his Wednesday evening receptions, Dr. C. D. Tenney, president of the Northern University, at Peking, and superintendent of schools in China, happened to be present. Dr. Bell showed him this book, which, of course, was utterly unintelligible to him, and said that he himself did not know what it was, although remembering that many years ago a Scottish missionary to China had been greatly interested in the symbols, he thought the book was probably his work. Dr. Bell was of the opinion, however, that the two of them together might be able to read it. Dr. Bell thereupon pronounced the symbols on the title page. Dr. Tenney listened attentively, while the others present looked on, wondering what might be coming. Distinctly and unfalteringly Dr. Bell read on, and, as the Chinese scholar listened, he started, bent closer, and then, astonishment and wonder in every tone, exclaimed, "Why, what Dr. Bell is saying is Chinese

for 'The Gospel of St. Matthew, Scottish Bible Society, Peking, 1874.'"

We give herewith Dr. Tenney's translation:

Ma-tai Fu-yin Shêng Shu
Saŭ-K'o-lan Shêng Shu Hui
Peiching, 1874.

The symbols are in the early style of the invention. Since then a few changes have been made, notably in the symbols for *s* and *sh*. Bearing in mind that ʊ here stands for *sh* and Ω for *s*, students will have little difficulty in verifying for themselves the accuracy of the translation.

Afterward Dr. Bell turned the pages, reading bits here and there, every time being understood by Dr. Tenney, who translated it to the others.

Surely no one can need greater proof than this of the great utility of the Melville Bell Symbols and their great possibility in the acquisition of foreign and unknown sounds.

Dr. Bell does not know Chinese; Dr. Tenney does not know the symbols; yet the two together could translate this sealed book of the Volta Bureau.

By a delay in printing these interesting examples of symbol work, we are enabled to say that the first page contains the words "Gospel of St. Matthew, Scottish Bible Society, Peking, 1874," and the second is the beginning of the fifth chapter of the Gospel, showing in Bell Symbols the Chinese version of our Lord's Sermon on the Mount.

But the name of the translator remains unknown. Can any of our readers reveal it.

M. G.

ב׳ אין בהם שלוש.

1 (11-13) ראשי-שלושים שלושה הם ראשי ערי ה[ש]ומרון,
שלושה שרים שלח שלח שלושה עיר, אין-אחד שלושה
שלושים שנה; 2 (11-13) ושלושה עשר אלף ושבע
מאות ושלושים: 3 (1-10) שלושה הם הראשונים
ואחריהם שלושה, שלח, 4 (11-13) שלושה הם ראשי
שלושה בתי אבות. 5 (23-31) הם ראשי ערי ה[ש]ומרון
שלושה: ושלושה-עשר אלף ושבע מאות. 6 (11-13)
שלושה הם ראשי שלושה בתי אבות. 7 (1-10) שלושה
ושלושים שנה ומלך שלושה חדשים.

8 (1-10) שלושה-עשר הם הראשונים ואחריהם
שלושה-עשר ושלושה-עשר ושלושה-עשר ושלושה-עשר
שלושה-עשר ושלושה-עשר הם ראשי שלושה בתי אבות.

9 (11-13) שלושה-עשר הם הראשונים ואחריהם
שלושה-עשר ושלושה-עשר ושלושה-עשר ושלושה-עשר
שלושה-עשר ושלושה-עשר הם ראשי שלושה בתי אבות.

PRESENT STATUS OF THE MELVILLE BELL SYMBOLS IN AMERICAN SCHOOLS FOR THE DEAF.

In order to arrive at some idea of the present status of the symbols in our schools, a circular was addressed to them all asking whether the symbols were used and to what extent; and if not used, why not.

Replies from seventy-six schools were received, with the following results:

Forty-six do not use the Bell symbols.

Thirty use them to a greater or less extent.

Of the forty-six schools replying in the negative, ten assign no reason; fifteen profess acquaintance with them; fourteen do not know them; seven claim to use Visible Speech "altogether," but so evidently confuse the name with "speech-reading" that it is apparent they can neither know nor employ it.

Of the fifteen claiming acquaintance with the symbols, nine are not impressed with their advantage over other means; three are convinced of their value for teachers, but not for pupils.

Of the fourteen not familiar with the symbols, four express entire disbelief and lack of interest, three misunderstand the name Visible Speech, and seven express interest and deplore lack of trained teachers.

Of the thirty schools using the symbols, seventeen require that teachers should know them and thirteen use them to a greater or less extent in school work.

M. G.

MY DOG PONTO.

Readers of "My Dog Ponto," in the April REVIEW, will be interested to know that the identity of the translator has been discovered in Miss Sarah L. D. Summers, a teacher in the Lexington Avenue, New York, School for the Deaf. She is, as was believed, a New Englander, and a native Bostonian. She was educated there and lived there up to the time she began to teach the deaf; and she was a member of Dr. Bell's normal class. Miss Summers has lived in New York for the last twenty years, and says that if she were to translate the story now there would probably be fewer of those peculiarities of speech which have been noticed.

M. G.

WHAT THE MELVILLE BELL SYMBOLS MEAN TO ME.

By Mrs. Alexander Graham Bell.

When I first saw the Bell symbols my habits of speech had already become too firmly fixed to be readily altered. For this reason they could not exert very great influence on my own speech. But perhaps I was all the better able to realize what they might have done for me, as they revealed things I had never known before. They showed imperfections in my speech of which I had previously been entirely unaware. Literally, they made visible the mechanism of the English language. The deeper I plunged into the study of the symbols the more astonished I became. At every turn of the page, almost at every line, new surprises met me. In fact, it was almost like reading a new language or it might be like seeing a familiar landscape through new spectacles. Features seen before in masses took on more definite, sharper outlines.

The commonest words were the ones that took on the strangest aspect. I discovered then for the first time that in such words as *was*, *is*, *as* the letter *s* has the sound of *z*. That *of* is pronounced *ov*; that *wh* does not have the same sound in who (O𐑵) as in where (𐑣𐑺); *th* is 𐑔 in then and 𐑖 in thin; *l* is 𐑤 in lace and 𐑥 in place; *w* is 𐑢 in wine and 𐑣 in twine. The last four sounds, it may be noted in passing, are not shown in the dictionary.

In ordinary conversation there is no visible difference between honor and onor (O𐑓𐑙, 𐑓𐑙); honest and onest (O𐑓𐑙𐑟𐑑, 𐑓𐑙𐑟𐑑), so I was not aware of the dropping of the *h*, and always said *h*onor and *h*onest in full confidence of the onor and onesty of my books.

Today I remember there is something wrong with these words, but forget what should be done with the *h*, and am just as likely to put it in.

One of the things that surprised me most in reading the symbols was their treatment of the small words and unaccented syllables. I always gave full value to the article *a*, saying ae man (𐑓 𐑱𐑤𐑥) instead of ǀ 𐑱𐑤𐑥. I knew, of course, that greater stress should be laid on accented than on unaccented syllables, but still supposed all vowels should be given as written; for instance, garden instead of gardn; eleven instead of elevn. It was news to me that the final consonant of one word is often run on to the commencing vowel of another, as when there is (𐑖𐑤 𐑓𐑖) becomes 𐑖𐑤𐑢𐑓𐑖.

Other instances out of many that occur to me are: often (𐑓3𐑙) and handsome (O𐑤𐑙𐑟]𐑱). A purist might insist that the pronun-

ciation in the latter instance is as spelt, and dictionaries back him up; as a matter of fact, the *d* is usually dropped. It is a pity that deaf speakers should not know when such slips are allowable. Their trials in acquiring intelligible utterance are great enough at best. It is much easier to whisper or slur over sounds than to give them clearly, so when ordinary folks allow themselves this privilege, deaf ones should not be denied it. It might even prove an advantage, for one does not want unusual primness and precision in speech. Hearing people indulging in it would be laughed at—and the aim surely is to make the speech of deaf persons as nearly like that of their companions as possible.

The symbols, generally speaking, did not teach me much that I had not already known about the pronunciation of vowels in words constantly used, because vowel formation is clearly differentiated in speech reading. Hence I was never in danger when saying man of giving the *a* as in fate; of pronouncing kite with *i* as in it; meal with *e* as in met; good with *o* as in out; true with *u* as in urn. For the learning of the right rendering of vowels in unknown words they are, however, invaluable. I have already enlarged my knowledge of several I had never seen spoken since the Melville Bell Memorial Department started the printing of matter in the symbols. For instance, Simon (ʊ]ɾəlʊ), which I always read ʊʃəlʊ.

The difficulty, as the examples given show, is with the consonants. One cannot forget the difference between *p* and *b*, *t* and *d*, although they look exactly alike in a speaker's mouth, because so clearly differentiated in print. I never think of a speaker's saying pat when I know he means bad. But the great majority of all our consonants have different sounds which unfortunately are visible neither on the lips of speakers nor in print, and which therefore do not exist for me. Instances are, *f*, *h*, *k*, *l*, *r*, *s*, *w*, *x*, and *y*. The letter *x* is very interesting in the variety of its sounds, being ɑʊ in exit; ʊ in Xeres; əlʊ in exist; and ɑn in anxious.

Many consonants have an unpleasant habit of dropping out of a word altogether, as *b* in debt; *p* and *l* in psalm; but the inconvenience this causes is shared with hearing people.

The unphonetic and arbitrary nature of our spelling does not seriously disturb a hearing person, because his hearing prevents any misconception or forgetfulness of the current rendering of words. This holds good also with a deaf speech reader *so far as his eye can trace the mechanism of the word.* If his eye could follow the whole of it as can the ear of a hearing person, or if the written word

supplemented in full all that was hidden in the spoken one, there would be less need of the symbols. A hearing person banished for a few years to a foreign country, and cut off from all intercourse in his own tongue, forgets it entirely. If he does not hear it spoken, but possesses books which he constantly reads, his knowledge remains, and very possibly he may remember how to speak it correctly, in so far as the printed word assists his memory of the pronunciation. But where the print fails to give the sound at all, he will in time surely forget it. Now this in many ways was my position. All that could be seen in speech or in print was remembered and spoken with at least approximate correctness, while that which neither speech nor print showed was forgotten and therefore never pronounced. I do not see how it is possible to prevent such forgetfulness when the memory is never assisted by some reminder. In the case of the words quoted, my forgetfulness was so complete that I had no doubt whatever but that they should be pronounced as written. Reference to a dictionary might have corrected the error in regard to some, but why such reference when there was no question? Seeing them written differently in the symbols gave me my first apprehension that things were not as they seemed in these cases as in so many others.

It will be noticed that all the examples given are different from those usually selected when the object is to show the unphonetic character of our language. I make no mention of such obvious examples as through (ɬ), plough (ʃɬ), trough (ʃƷ), or rain, reign, and rein (ωʃ𝔀), of notion (Ω|𝔀); or financial (Ω|ω) because these all present no more difficulty to educated deaf speech readers than to hearing persons. Only such are given as are stumbling blocks to deaf persons and deaf persons alone.

The symbols show in a clear and easily remembered form the exact pronunciation of all sounds, and their character is so fixed and immovable that once having mastered them there can remain no doubt as to the sound they represent. They do for the eye what the ear does for the hearing person: *they show the whole of a sound.* In this way by occasional reference to a book written in symbols a deaf person is able to keep fresh his recollection of the proper pronunciation of all those sounds of which ordinary print or speech reading give no hint. In short, he is placed in almost as favorable a position as a hearing person toward the correct pronunciation of our language: he is enabled to see sound.

Much has been made of the additional burden on a pupil of learning the symbols, but it does not seem to me as great a task as

is placed without comment on German children in learning the several forms of German writing. I learned the symbols easily, the chief ones in half an hour, and never afterwards forgot them. My two daughters, as small children, mastered the line writing form almost as a play. But to me the immense benefit the symbols would be to the deaf child, both in the start and all his life afterward, far outweighs any possible difficulty their acquisition can be.

While the unphonetic nature of our vowel characters, roughly speaking, causes an educated deaf person little more trouble than a hearing one, the tax on the deaf child must be frightful. Here is a sentence of twenty-two words taken at random from a daily paper:

ɔʄω ʊɔʊlɔ ɳlʊɔıɯʃ ɔʄɯ ʊɔlɒɔ ɐʃr ı ɜlʃwlɯnıω ʊɔʄıɐ ɯlʊɔlʃɯɯ ɔɬ ɒlʊ lɯɔɬ olʊɔıɯl ıɯʄɐ ɔlʃω ɯl ɜʃɘlʊ ɯlʊɔlɪɐlɯʊlʃω ʄɜ ɯl ɒlʊɔ

The letter *a*, occurring eleven times, is sounded in six different ways; *e*, occurring nine times, has five sounds; *i*, eight times, with three separate sounds; *o*, six times, with three sounds; *u*, twice, each different; *y* occurs four times, sounded in as many different ways. The consonant *r* occurs five times in three forms. Altogether there are fourteen consonants, only five of which preserve the same sound in every case.

Now the different sounds of all these letters have to be learned by heart, and in cases where neither the spoken nor the ordinary printed words show these, the only means that usually exists to impress them upon the child's memory is constant drilling and reiteration. This obliges constant nagging and being stopped in the middle of sentences, than which there is nothing more irritating and exhausting to the nerves of both pupil and teacher. Through the symbols three-quarters of the need for this most trying labor disappears. Just refer to the proper symbols, and give plenty of exercise in reading through stories printed in them, and the child will learn for himself.

The art of speech-reading and knowledge of the proper pronunciation of our language are closely co-related, it being extremely difficult to read correctly the movement of speakers' lips unless the knowledge exists of what they should indicate. Therefore through the Bell Symbols deaf children may not only hope to speak intelligently sooner and with much less effort than in the past, but also to get more quickly in happy intercourse with their friends.

QUESTION BOX.

(Questions from Clarke School, Northampton, Mass.)

In teaching the Deaf would you make use of the hold (ɬ)? If so, will you please give several examples.

Which would be better to use in combination with front vowels: the normal position for k (ᑫ) and g (ᘐ), or the outer formation of these elements ᑫ› ᘐ›?

Which would be better to use in combination with point consonants?

Are there any cases where the inner formation of these elements would be better than the normal position?

Formation and development of ᘳ. How may combinations of ᘳ be taught?

How would you write *ch* in Visible Speech for deaf children? How develop it?

How would you write for young children the final syllable in such words as water, butter, etc.?

Final ᑌᑐᑌ proves very difficult for many pupils. Can you suggest any way of helping them?

For young Deaf Children would you advise teaching ᘳ and ᑌ?

Reply by Dr. Bell.

I will preface my reply to the questions that have been submitted to me by saying, that in my own practice I used the Bell symbols for two distinct purposes: (1) to provide phonetical reading matter for deaf children so as to fix the model pronunciation in their memory by constant repetition of it in written form, and (2) to express in a clearly visible manner the difference between their own pronunciation and the model.

Both purposes can be fulfilled by the employment of the Bell symbols, and I do not know of any other means, in use anywhere, whereby either object can be accomplished. The phonetical spelling of our dictionaries in which diacritical marks are employed is nowhere used to supply phonetical reading matter, and it could not be used to express the imperfect speech of our deaf children.

Our deaf children have absolutely no literature of any kind in which the spelling corresponds to the pronunciation, and thus lose the advantage possessed by the deaf children of Germany and Italy who have constantly before their eyes a phonetical representation of their language in the ordinary literature of the people. The Bell symbols may be made to supply this need of our deaf children, at least in part, to the great benefit of speech-teaching in America.

QUESTIONS.

1. In teaching the deaf would you make use of the hold (ˈ)? If so, will you please give several examples?

There is little or no necessity for employing this symbol (ˈ) in phonetical reading material; but, for the purpose of showing the difference between our speech and the speech of the children, some sign for the prolongation or undue retention of a position is necessary. In syllables containing long vowels the vowel positions are prolonged, but where short vowels occur the shortening effect is produced, not so much by an intentional shortening of the vowel, as by the prolongation of the succeeding consonant position. The vowels are snipped off, so to speak, by stress upon the succeeding obstructive position. Take for example the familiar quotation, "To be, or not to be, that is the question."

ʊˈtəʃ ɟʍɟʊˌʊˈtəʃ ʍɪʊʃʍɯɑɔɪʊʊɑɪʍ

In emphatic utterance, with the emphasis strongly upon the word "*not*," the prolongation of the shut position (ʊˈ) is so great as to occasion a perceptible hiatus or silence in the midst of the sentence. The same kind of action, though in lesser degree, occurs in all short syllables which end with consonants. To make the difference between the long and short syllables intelligible to a pupil, I use the holder (ˈ), and also divide each syllable into distinct elementary articulations.

EXAMPLES.

ʃˈ ʊ> eat
ʃʊˈ > it

ɑɟˈ ʊ> caught
ɑɟʊˈ > cot

ɑ]ˈ ɜ> calf
ɑ]ɜˈ > cuff

The unnatural effect produced when deaf children attempt to pronounce *ch* in such a word as "church" can also be usefully shown to them through this symbol (ˈ). I show them that they make three articulative actions when they attempt to say "church" while we only use two. They say ʊΩˈ ʃ ʊΩˈ. We say ʊΩʃˈ ʊΩ>.

2. Which would be better to use in combination with front vowels, the normal position for k (ɑ) and g (ɡ), or the outer formation for these elements (ɑ› ɡ›)?

The normal positions, ◻ ◵, in reading matter, although of course in such words as *key* and *geese*, ◻◟ and ◵◟◡, the outer formation is really employed; but this follows naturally from the principle of combination, which demands that one position shall not be relinquished until the next position is assumed. In actual utterance speech positions do not merely succeed one another like the letters on a printed page, they *overlap*. In the word ◻◟ the front position, ◟, is assumed by the tongue before the ◻ position is relinquished, thus causing the ◻ to become ◻◝; but there is no necessity to complicate our spelling in our reading material by the introduction of the modifying symbol (◝), for in such a case the position is naturally modified by the succeeding position, if the two properly overlap as demanded by the principle of combination.

3. Which would be better to use in combination with point consonants?

The normal positions without modifying signs in reading material.

4. Are there any cases where the inner formation of these elements would be better than the normal positions?

I know of none. In the case of k (◻) the inner formation ◻◜ is very often given by deaf children, and is very objectionable, constituting a defect that should be corrected. The symbol (◜) should therefore be used in such a case to show the child how the position assumed by him (◻◜) differs from the correct position (◻).

5. Formation and development of *l*. How many combinations of ◡ should be taught?

The vocal and non-vocal forms. The non-vocal form is very easily acquired by deaf children and they should be taught to give the non-vocal form where *l* succeeds a non-vocal consonant in the same syllable. Examples: *please* and *clean*. Deaf children should be taught to say ◵◡◟◡ and ◻◡◟◡, rather than ◵◡◟◡ and ◻◡◟◡, which are apt to become dis-syllabic, ◵◡ᵢ◟◡, or even ◵ᵢ◡◟◡, etc. I am inclined to think that it would be well to impress this point upon the minds of the children by the use of the non-vocal *l* (◡) in such cases in our reading material. The matter is not important, however, as the pronunciation can easily be established by the rule, that *l* should be made non-vocal after a non-vocal consonant in the same syllable with it.

6. How would you write *ch* in Visible Speech for deaf children? How develop it?

Ch has several different sounds in English in character, in choir, in chew, in chaise, and in other cases is sometimes silent, as in yacht (). I presume you refer to *ch* in chew. I would express this sound by in reading material, although in our actual speech the position is more nearly , but this results from the principle of combination, the elevation of the front of the tongue for *sh* () being accomplished before the shut position () is relinquished. I see no necessity for adding this special character () to the number of letters required in our phonetical reading material. The difficulty in getting deaf children to pronounce *ch* in an acceptable manner does not lie in the shut position, but in the unnecessary prolongation of the *sh* position. I would recommend teaching the deaf child to pronounce *ch* as > instead of , treating the as a mere transitional glide (non-vocal of course). Example: "church" >.

7. How would you write for young children the final syllable in such words as water, butter, etc.?

I would simply use the voice glide, , etc.

8. Final > proves very difficult for many pupils. Can you suggest any way of helping them?

Such a combination is difficult for any one. My plan would be to get the pupil to pronounce > and > in contrast. In many cases it may prove impracticable to obtain a satisfactory pronunciation. In such cases why not try the plan of getting over difficult combinations adopted by ordinary, careless, slipshod speakers: *Simply omit the difficult element altogether.* Example, "asked," > would be perfectly intelligible from its context in a sentence, and would be much more acceptable than > with a defective , or a defective combination of . It is astonishing how imperfectly difficult combinations of consonants are pronounced by careless speakers. Why should we not allow our pupils, in difficult cases, to adopt an easier, though incorrect combination, if the incorrect form is in current use by hearing people.

Take another case, the word "clothes." In my opinion there is no necessity for insisting too strenuously that the *th* in "clothes" should be pronounced by a deaf child if he cannot give it in an acceptable manner, for a large proportion of our population simply say instead of , and why should not the deaf child take advantage of the custom.

I once heard an eminent divine read from the pulpit the remarkable sentence: "Oh! that all difference of *sex* were at an end." Of course he meant "sects," but no one seemed to notice the error, least of all the clergyman himself. If such errors can be tolerated in a public pulpit, why should we insist that the deaf child shall attempt to pronounce the *t* in "sects" if he cannot do it acceptably. If he can say "sex"—why, let it pass: none but the hyper-critical will be offended, and the context of the sentence in which it is used will make it perfectly intelligible. In a similar manner let the deaf child say]ʊʊ> for]ʊɑʊ> (asked), if he cannot give the latter in a pleasing way.

9. For young deaf children would you advise teaching ω and ʊ?

I certainly would. Non-vocal *l* and *r* (ω ʊ) are more easily pronounced by deaf children than the vocal forms, and all of us pronounce these elements non-vocally when they come after non-vocal consonants in the same syllable with them. Ordinary ears are offended by a vocal *l* or *r* as given by deaf children in such words as ʊʊſ, ɒωſω, ʊɑʊſə, etc., (tree, please, scream), sounding like ʊıωſ, ɒıωſω, and ʊɑıωſə. Of course these elements should be vocal after vocal consonants, or by themselves, following or preceding vowels. A. G. B.

CORRESPONDENCE.

THE BELL SYMBOLS AS AN ADJUNCT TO SPEECH-READING.

BETHEL, MAINE, April 14, 1908.

. . . I do not understand how such good results are obtained by those teachers who do not understand and apply the principles of Visible Speech.

For the instruction of adult pupils, who having lost their hearing have also lost clearness of enunciation, I find Visible Speech especially helpful, and for correction of manifest defects it is invaluable. I have used it for giving correct sounds in German and French.

How could a teacher show the distinction between Iɣ and Iɤ, a distinction which I have always made, without the Bell symbols?

In teaching Speech reading also, I make use of the Bell symbols, letting the pupil write exercises, and of course read selections that I have written. I make great use of the symbols in writing words just as they look and requiring the pupil to supply the miss-

ing *voice, or voice-with-soft-palate-depressed* in such a way as to render the word or phrase intelligible; for instance:

demand = ʊʃɒɪʊ> = ʊʃɒɪʊ> = ʊʃɘɪʊ> = ʊʃɘɪʊ> = ʊʃɘɪʊ> = ʊʃɘɪʊ> = ʊʃɘɪʊ> = ʊʃɘɪʊʊ> = ʊʃɘɪʊʊ>

Or a word may be reduced to its lowest terms and *demand* result in ʊʃɒɪʊ> Anything to induce the pupil to translate quickly what he sees into the spoken word.

This work is for home study and is better than giving a list of words to commit to memory, or at least supplements that study. Perhaps letters might be used in place of the Bell symbols, but it seems to me that a letter commits one to a fore-ordained notion of a word and sends the mind off into a consideration of that word and its connection with the subject.

MARY H. TRUE.

NOTE.—The Editor directs particular attention to Miss True's remark, that ". . . a letter commits one to a foreordained notion of a word, and sends the mind off into a consideration of that word and its connection with the subject." Miss True here clearly indicates one of the fundamental differences between the symbols and ordinary letters. It is their absolute disconnection with alphabets that constitutes their great superiority for their purpose. Through them it is possible to think of sounds as sounds pure and simple, and to arrive at their values as such, a thing impossible by any means which is also connected with their use as words. M. G.

THE BELL SYMBOLS VS. DIACRITICAL MARKS.

. . . I shall appreciate very much a letter from you, showing in what way visible writing (or Visible Speech) offers any material gain in the teaching of sounds and correcting of sounds over against the diacritical marks to be found in the dictionary. I have been a close follower of everything written on and about Visible Speech, but till now I have failed to see any advantage of using it in the instruction of the Deaf. . . . I do not see why the child should not be able to retain the memory of the sound by the diacritical mark, and do it just as well as with the help of visible writing, the memorizing of which must be a great additional burden to the Deaf.

WM. GIELOW.

REPLY BY MISS FULLER.

The symbols of Visible Speech have this distinctive advantage over diacritical marks: they are directive, while diacritical marks are wholly arbitrary and are different in meaning in the various

dictionaries, thus requiring the study of the "key to the sounds of marked letters" whenever an unfamiliar dictionary is consulted. Visible Speech symbols are unchangeable, and any person, whether deaf or hearing, can follow their guidance with entire confidence, knowing that, having learned to interpret them, he has nothing to question. This characteristic alone makes them of immense value. The time and place for the use of Visible Speech symbols in the early education of deaf children is a matter about which teachers may differ, but there can be no doubt of the importance of teaching every speaking deaf child to understand and to use them.

In my opinion, nothing furnishes a teacher with so good a basis upon which to found his work in speech development as a knowledge of Visible Speech, and none can afford to neglect a careful study of it.

SARAH FULLER.

HORACE MANN SCHOOL, BOSTON, MASS.

THE WRITING OF CH.

Have been wanting to write you ever since the April REVIEW came to put in my little word on the Visible Speech symbol for *ch*. I have always made a distinction between *ch* initial and final, for to me there is a marked difference. Take "church"; to me, the initial is a purely shut position, and the symbol would be Ω, while the final is a shut followed by center aperature, and the symbol would be ΩՈ. I treat *j* and soft *g* the same, Ω initial, ΩՈ final.

E. F. W. D.

ƨlωƷlω ƨlω ʊlƨƨIωʊ

COPIES of the stories and rhymes so far printed in the Melville Bell Memorial Department can be obtained in booklet form on application to the Secretary of the Association, 1525 Thirty-fifth Street, Washington, D. C. To cover cost of publication and mailing, a charge of 25 cents per dozen copies will be made. M. G.

ꞏꞏꞏ

ꝺfɒmɹɛɑfɛ.ɪʊ

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The Lord's Prayer.

Our Father, who art in Heaven,
Hallowed be thy name. Thy
kingdom come. Thy will be done
on earth, as it is in Heaven.
Give us this day our daily bread,
and forgive us our trespasses,
as we forgive those who trespass
against us. And lead us not
into temptation; but deliver us
from evil: for thine is the kingdom,
and the power, and the glory,
for ever and ever, Amen.

THE INSTITUTION PRESS.

A CONDITION AND NOT A THEORY.

The following very sensible remarks are from the pen of Superintendent Walker of the Florida school:

"That the combined-method system of educating deaf children is a faulty system is admitted by a number of superintendents; in fact, it is admitted by a great majority of them. We have pointed out for a number of years this illogical system of wedding two methods so absolutely incompatible. But the readjustment, or rearrangement of the system? It is, as our friend Blattner is wont to say, a condition and not a theory we are facing. It is a case of dollars and cents. Admitting, as most of us do, the fallacy of the present arrangement, we, especially of the South, know that our commonwealths are not rich and prosperous enough to give us a per capita of from $300 to $400 with which to remedy our existing deficiency of systems. The best that we can do is to apply ourselves earnestly and studiously to our present system, not abusing it, but with a determination to get all the good there is in it. A strict application of the system will undoubtedly relieve it of some of its so-called faults. One trouble with a number of our schools today is the laxity of its application."

Mr. Walker is evidently puzzling over this question more than usual at the present time, as he has a big appropriation to erect new buildings. It behooves him to consider it seriously in all its bearings, as the plans of construction adopted and the consequent policy pursued may necessarily be permanent. As he says, the question is largely one of dollars and cents; at any rate that feature of it can not be overlooked, and in his case it is doubtless one of grave importance. It costs more to construct buildings and conduct a school with a view to a proper adjustment and coördination of methods than to continue the plans in vogue for a generation or two past. Then too the division into manual and oral departments makes the problem of classification more difficult, and in the case of a small school like that of Florida the classes in each department would be so small as to make the cost of instruction rather heavy. But all this would have to be considered, and Mr. Walker has the opportunity of a lifetime, if he can see his way clear, to inaugurate a new policy in his State. Of course a great improvement under our present system is possible, as he says, if its privileges were not abused and every one connected with the school earnestly and conscientiouly tried to promote a spirit in favor of persistent speech by the pupils in our oral departments. The trouble is there is too much laxity along that line; it not infrequently happens that oral teachers even, the very ones that should be zealous in the promotion of a speech spirit, are indifferent. Under such circumstances and with the additional disadvantage of large classes teaching speech to deaf children in combined-system schools as at present organized is uphill business; we go further and declare that to impart a practical command of speech, with such obstacles to overcome, is well nigh impossible. Let those who in unctous self-flattery are disposed to deny this show up. We repeat what we have asserted often before that the ideal adjustment of our combined-system schools is to have a pure oral department, and a manual department, separate and apart, where the speech failures and those who enter school too old to learn speech can be placed. It has been our contention all along that even under the most favorable circumstances a considerable number would thus find their way to the manual department and the latter would continue to be a necessity. Such a policy, if carefully and conscientiously pursued, would, while giving every deaf child a chance to learn speech, land the oral misfits

where they belong and rid the oral classes of a burden and a drag. There is no question in our mind that this is the proper solution of a vexed problem, and it will sooner or later be solved in this way generally throughout the country. In our smaller and poorer States the change will perhaps be long deferred, but in the wealthier and more populous States the way will readily open. The essential thing is for every one concerned to approach the question in the proper spirit, laying aside all prejudice and looking only to the best interests of the deaf child. Those schools securing big sums for enlargement or new plants have it in their power to usher in the change at once. Will they do it? Let us register a warning to our ultra-conservative friends, and do it in all kindness. If they persist in pursuing the even tenor of their way they may, ere long, be up against a pressure from without to do the impractical thing, that is, adopt the pure oral method in toto. This is no threat; we should be as sorry as they to see the question take such a turn.—[The Lone Star (Texas).]

THE NEW COLLEGE REQUIREMENTS.

The March number of the Annals contains the long expected announcement by the authorities of the proposed change in the requirements for admission to Gallaudet College. But, as this new change does not go into effect until 1909, we shall have one more opportunity at the end of this school year to send pupils to college under the old entrance plan. . . .

The preparatory work outlined in English—composition writing, the course in reading, and the close study of a list of selected English masterpieces—will be difficult to many pupils, even to the brightest in any school for the deaf. To successfully take a class of advanced pupils who are the products of our primary and intermediate departments through this course alone will depend in large measure on the character of their early work in language and the manner they have been taught to think for themselves in the lower grades. Development of the thinking and language habits must be the great aim of every school for the deaf that hopes hereafter to send pupils to Gallaudet College. And the work along this line must be careful, rigid, and thorough.

The addition of Algebra and Latin to the list of required subjects will also make the work of preparation harder for the pupils. To most of our pupils these studies will be entirely new, and, to learn them, more time will be needed. But, if shop work is dispensed with during the last two years of preparation, we can give our boys and girls sufficient time for study, composition work, and the perusal of the recommended reading course.

We believe the new arrangement will result in raising the standard of both the schools and the college. Therefore let us buckle down to harder work and try to bring this about.—[Michigan Mirror.]

A NEW SUPERINTENDENT.

Mr. William C. Ritter has been elected superintendent of the recently established school for the colored deaf and blind in Virginia. He received the unanimous vote of the board, which was quite a compliment. The honor conferred was well merited. Besides being an intelligent, energetic fellow, Mr. Ritter has worked for years, in season and out, to have the legislature of his State recognize the needs of the colored deaf and blind. Two years ago a bill establishing a school for them was passed through Mr. Ritter's efforts, but the money appropriated was not available on account of some technical oversight in the passage of the bill. We understand that twenty-five thousand dollars have been set aside by the legislature to establish the school and start it off. Offers of sites are called for, and two have already been offered with perhaps others to follow. Mr. Ritter has been authorized to inspect these and others that may be offered and report to the board by

May 15. We are glad to know that Virginia is at last to have such a school and that the man who did so much toward securing the means is rewarded with the superintendency. It is not always the way of the world that a man is thus rewarded for his labor in the interests of a worthy cause. Politics and favoritism too often decide such appointments. Mr. Ritter is a deaf man and his own affliction is calculated to put him in thorough sympathy with the afflicted who will come under his charge. He is a semi-mute and received his education mostly at the Staunton school. It was in large measure due to his persistent efforts that the last convention of the N. A. D. was secured for Virginia.—[Lone Star (Texas).]

One of the progressive young members of the profession puts it something like this:

"We are all practically agreed that the combined method as we now have it in most schools is not bringing the results we want; but any other arrangement than that we now have would cost more than the states can afford to pay and we must therefore peg away and do the best we can with what we have."

The young man is right, perhaps, so far as he goes, but he could have said more and I am sure he will pardon us if we add what his aggressive and progressive course in his own State leads us to believe he would have said had he pursued the subject further.

We probably do know better work could be done with more money, and all of us, no doubt, with due consideration for the public purse, are conscientiously working away the best we can, making the most of what we have.

But we should do some other things that we may be leaving undone because they may seem not altogether pleasing to us or to the public generally. If we know a better way of teaching the deaf than we have in our own schools, it is our duty to tell our lawmakers so, leaving the cost entirely for their consideration and action. The loyal people of any State are proud of their State and glad to see progress along all lines of work undertaken by it. While to know what is best is not always to do what is best, we certainly cannot expect or hope for progressive action without accurate and complete knowledge. It is perfectly legitimate to show that we are making the most of that placed in our hands to work with, but we must never omit to explain that there is a better way and that greater results may be had at greater cost. When the people understand the situation thoroughly and feel that they are getting full returns for their investment, but that for the lack of a comparatively small additional amount the returns are proportionately far shorter than could be had for the greater outlay, it is only a question of time when they will provide for the best that is to be had.

This solution of the whole matter lies in a campaign of education originating with those who are in a position to know and extending to the whole people who when they are interested really want to know. Let all the schools get together and decide upon what is the best method of making intelligent, self-supporting citizens of the deaf and the blind, giving the matter of cost an entirely secondary consideration; let all Boards of Trustees fully understand the conclusions reached by the schools and let them in their official utterances fully endorse all that is decided upon, frankly stating wherein their respective schools are short and earnestly appealing for funds enough to bring them up to the standard agreed upon as the best; let all this be done insistently and persistently, year in and year out and we predict that results will be apparent much sooner than the most sanguine of us would expect.

Contentment is a good thing in a certain sense, but in another it is stagnation and death. The teacher who ceases to improve goes backward and is soon unfit to hold a position. The school that rests on its past or present achievements, that accepts without protest that which is inadequate to its wants, or that hesitates to show wherein its own work is hampered by any lack whatever, is not keeping step in the march of progress in which we should all stand shoulder to shoulder, none too strong when perfectly united in one common cause.—[Colorado Index.]

Apropos of several recent editorials in regard to the sense of smell of the blind-deaf, observation of the blind-deaf of this school has not resulted in as many remarkable discoveries as are credited elsewhere—yet there is abundant evidence that these children do possess a very acute sense of smell.

The incident related in the School Helper by Mr. William Wade of a man who reprimanded Lottie Sullivan for saying she recognized him after an absence of two years by smelling him, is a deplorable fact; but it is impossible to determine by what smell she was able to do it.

It is doubtful if Lottie—herself—has a definite idea of what personal odor means. For instance, she frequently tells one of her teachers, "I like your personal odor very much," and when asked to tell what it is like spells "Powder." She recognizes the engineer's presence, without touching him, by the "engine-room smell," as she calls it; and those who live in the new building by the "new building smell." She can tell when one of her teachers has been helping in the kitchen at home by the odor of cooking in her hair; and she readily distinguishes the various stores as she walks along the street. All this is evidence of a keen sense of smell but does not suggest particular ability at distinguishing personal odors.

She recognizes certain friends readily, others with decided hesitation. She remembers some for several years; others are forgotten in a week. It is impossible to give a reason for this which would be more than a supposition since, as yet, no reason is definitely known. That she knows some people by rings, bracelets, a peculiarity of the hand in size or nervousness, and others by smell is certainly true and it is very probable that she is keenly sensitive to the distinctive personal smell of individuals and may recognize them in that way. There are persons who are sighted and hearing who claim they can recognize a large majority of people by their personal odor, so why should not the blind-deaf be able to do it? Yet there is always danger of forming opinions based largely on conjecture; and what is not based on actual facts, well proved, is not worth while and sometimes very misleading.—[Colorado Index.]

Andrew Carnegie has added $5,000,000 to the Fund given to provide retiring pensions for college professors who have passed the age of greatest usefulness, for the purpose of extending its benefits to the professors of State Universities. All institutions receiving State aid have heretofore been barred from participation in the benefits of the Fund, but their representatives have succeeded in bringing about a reversal of Mr. Carnegie's policy toward them.

Why should not Schools for the Deaf be included among the State institutions receiving the benefits of the Fund? As our Schools are strictly educational institutions and the work requires a specialization in the same manner that the preparation for professorships in colleges does, it looks as if the educators of the deaf have good grounds for a claim to a share in its benefits.

At the last meeting of the Speech Association, held at Pittsburg in the summer of 1906, a committee consisting of Dr. A. Graham Bell, Mr. W. O. Johnson, Superintendent of the Indiana School, and Mr. Edward Lyon was appointed to confer with Mr. Carnegie on this matter. Teachers of the Deaf await the report of the Committee with interest.—[Kentucky Standard.]

When a mother takes her new-born babe in her arms she begins unconsciously to educate him. She is God's appointed teacher; she was prepared by Him for this duty. She is therefore the true teacher of all mankind. Following her closely we find that her "course of study" embraces seven subjects. She teaches him about *things*, about *people*, about *himself*, about the *earth;* she teaches him to *count;* she teaches him *language*, and instructs him in *ethics*. If teachers of the deaf desire success to crown their labors, let them study assiduously the mother and the child, study how the above enumerated subjects are woven into the very life of the child, and then apply their knowledge to their class of little beginners. Work also to bring out the individuality and originality of the child.—[Florida School Herald.]

EDITORIAL COMMENT.

THE MELVILLE BELL MEMORIAL DEPARTMENT.

With this number, as will be observed, there is presented a new title for our Department of Visible Speech, namely, the "Melville Bell Memorial Department." The appropriateness of the title is obvious to all familiar with the fact that the "universal phonetic alphabet" known as Visible Speech is the invention of the late Alexander Melville Bell, and with the further fact that the establishment and maintenance of the department upon the plan in view have been rendered possible on the part of the Association through the possession of the recently acquired "Alexander Melville Bell Memorial Fund," a foundation created with it as one of its chief purposes the perpetuation and propagation of the Melville Bell Symbols through publication and other means. It is proposed to make this department a permanent and prominent feature of the REVIEW, with the aim that it shall be a practical, helpful auxiliary to all school work in giving intelligible speech to deaf children. Through a fortunate arrangement that we have been enabled to make, the editorial oversight and direction of the department have been assumed by M. Gardiner, who is abundantly qualified for the position through profound interest in the work of the education of the deaf and with practical knowledge of the subject of speech teaching and its problems, together with an intimate acquaintance with the Melville Bell Symbols in their various uses and values. Already the editors have received many words of encouragement and expressions of satisfaction with reference to the new department and its establishment from the leading speech teachers of the country who, with keen vision, see the beneficial effects sure to inure to the work at large through a more extended and intimate knowledge by teachers of the Melville Bell Symbols and of the science of phonetics that is based upon them. This means much as interpreting the general thought throughout the profession, and we cannot but feel that the seed sown and to be sown through means of the department is to find ready and fertile soil, and that it will spring up to bear abundant fruit showing in the more intelligible, as well as more intelligent speech of all deaf children under instruction. F. B. W.

THE VOLTA BUREAU AND THE AMERICAN ASSOCIATION.

As will be read in the report of the proceedings of the Annual Meeting, printed elsewhere in this number, the preliminaries are now in progress whereby the Volta Bureau will be placed under the general direction of the Board of Directors of the Association. While the announcement of the gift will come in the nature of a surprise to the Association generally throughout its membership, it will be received, we are sure, with the liveliest feelings of gratification in view of what it means for the Association in the material increase of its resources, the addition to its activities, and the enlargement of its influence and its field of work. Gratification too will be felt at this manifestation of Dr. Bell's continued interest in the work of the Association which he founded, and of his confidence in its management. It would anticipate matters not yet settled for us to say more at this time regarding the new relations instituted between the Association and the Volta Bureau, and between them both and the work of deaf education at large. But it is quite safe to say, as regards the latter, that the relations and policies of the two institutions with all outside interests will suffer little, if indeed any, change from those that have in the past and up to the present time prevailed.

F. W. B.

THE CONVENTION OF AMERICAN INSTRUCTORS AT OGDEN.

The following announcement from Mr. Driggs regarding arrangements for the Convention to be held at Ogden, Utah, July 4-11, includes important details as to railroad rates and entertainment that all planning to attend will be glad to know:

The same tourists' rates will be made from eastern points to Ogden as were in effect last year; that is, commencing with June 1st and daily throughout the summer, excursion tickets will be sold from Omaha and Kansas City at a rate of $30.50; from St. Louis $38.00, and from Chicago $43.00. These tickets have stop-over privileges and are good returning until October 31.

The railroad people will make a rate of $61.50 from Ogden to the Yellowstone Park and return, including stage fare and hotel accommodations for their five-day trip via the Mammoth Hot Springs, and a rate of $54.00 covering their four-day trip in the

Park. They believe that in the majority of cases it will be to the advantage of persons desiring to visit the Yellowstone to purchase "Yellowstone tickets" from starting point and stop over at Ogden for the Convention.

The matter of entertainment is in the hands of a committee of our teachers. Among their plans we may mention: a special concert for the members of the Convention by the famous Ogden Tabernacle Choir of two hundred voices; an outing to Salt Lake City and the Great Salt Lake, which will include an organ recital in the great Mormon Tabernacle, a trip about Salt Lake City, a bath in our briny inland sea, and dancing in the Saltair pavilion over the lake; daily excursions up Ogden Canyon one mile east of the Institution; trips to the summit of Observation Peak, a snow-capped mountain immediately east of us and 11,000 feet above sea level; visits to the State Industrial School, the Ogden Sugar Factory, the Hot Springs, etc.

FOREIGN VISITORS TO OUR AMERICAN SCHOOLS.

Our Eastern American schools have been visited recently by teachers from abroad in the persons of Mr. N. K. Larsen, of the Nyborg, Denmark, school, and Miss J. S. F. Douglas, of Birmingham, England. Mr. Larsen is an associate of Dr. Forchhammer and Mr. Hansen, in the Nyborg school, and Miss Douglas is a teacher in one of the day schools of Birmingham, who has during her absence from her post spent some time in Australia visiting schools in that country. Both visitors made a thorough inspection and study of the Volta Bureau while in Washington. F. W. B.

THE EIGHTH SUMMER MEETING OF THE ASSOCIATION.

The Eighth Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf, as will be seen in the report of the Board proceedings, has been appointed to be held in Chicago, in the summer of 1909. As this will be the first meeting presenting a literary program held in the West, it will, we feel assured, be welcomed by our members in that region and be largely attended by them. It is expected that the sessions of the meeting will be held at the Chicago Normal School, where accommodations will be afforded of a high order in all respects. F. W. B.

A SPEED TEST OF THE SINGLE AND DOUBLE-HAND ALPHABETS.

The opportunity presenting itself for a test of the relative rapidity of spelling by the single-hand and the double-hand alphabets, we availed ourself of it to settle the question in our own mind once for all. And that others interested may have the benefit of the test made, we present the results of it below. The conditions of the test were these: that a person accustomed to both alphabets, and equally skilled in their use, should spell a given passage, first in the one alphabet, then in the other, the time occupied in each spelling to be noted by the watch. The person fulfilling the first of the conditions we found in Mr. Wm. Lee, a deaf man connected with the Pennsylvania Institution, whose education in its earlier part was gained in an Institution in Ireland where the double-hand alphabet was used, and in the later part at the old Broad and Pine Streets School in Philadelphia, where the single-hand alphabet was in use.

The Lord's Prayer was used in the test, and to prevent any omissions in the spelling of it, a chart containing it was held in view of the speller. The instructions were that the spelling should be at top speed, and that the letters be made plainly and without omissions. After two or three spellings with each alphabet without timing to bring all conditions to their best, three tests with each alphabet were made with the following results:

	First Test.	Second Test.	Third Test.	Total of Three Tests.
Double-hand, spelled in.....	35 seconds	35 seconds	36 seconds	106 seconds
Single-hand, "	40 "	37 "	37 "	114 "

The difference between the two speeds is slight, yet it shows the double-hand to be the speedier by about 7 per cent.

While we can not say anything of the relative plainness of the two kinds of spelling in this exhibition, having too little familiarity ourself with the double-hand alphabet, we can say there was something of slurring over and even a suspicion of actual omission of some of the letters in the single-hand renderings, while, so far as we could judge, there was nothing of the kind in the case of the double-hand spellings.

In response to our questions as to the relative ease of reading with the two alphabets, Mr. Lee gave his testimony positively in favor of the double-hand, saying that it was easier and less tiresome to read; also that it was easier and less tiresome to the one spelling. This test and Mr. Lee's testimony ought to go far to settle points heretofore in doubt in the minds of some who of late have been giving thought to the question of the relative superiority of the two alphabets.

F. W. B.

PROGRAM OF THE DEPARTMENT OF SPECIAL EDUCATION, OF THE N. E. A.

The following is the program as published of the Department of Special Education of the N. E. A., for the meetings at Cleveland, Ohio, June 29–July 3, 1908:

Wednesday Morning, July 1—Topic: The Special Child. 1. The Home and the Special Child—Jane Addams, Hull House, Chicago; 2. The Public School and the Special Child—Earl Barnes, lecturer for the American Society for Extension of University Teaching, Philadelphia, Pa.; discussion led by Alexander Johnson, secretary of The National Conference of Charities and Corrections, Indianapolis, Ind.

Thursday Morning, July 2—Topic: The Problems of the Special Class. 1. Report of the President—E. R. Johnstone, superintendent, State School for the Feeble Minded, Vineland, N. J.; 2. Elizabeth E. Farrell, inspector of ungraded classes, Public Schools, New York city; 3. Isabel Thompson Smart, M. D., medical examiner, department of mentally defective children, New York city; general discussion led by Ada M. Fitts, Boston, Mass.; Dorothy M. Caterson, New York city.

Thursday Afternoon, July 2—Joint Session with Departments of Child Study and of Educational Committees of Women's Organizations.

The officers of the Department for this year are: President, E. R. Johnstone, Vineland, N. J.; Vice-President, O. H. Burritt, Batavia, N. Y.; Secretary, Jennie Smith, Eau Claire, Wis.; Chairman Local Committee, Grace C. Burton, School for the Deaf, Cleveland, Ohio.

The following personal note we have received from Miss Burton, Chairman of the Local Committee:

"I should be glad if you would publish in the REVIEW an invitation to all superintendents and teachers of Deaf schools who come to the N. E. A. to make their headquarters for rest and information at the School for the Deaf, 2380 E. Fifty-fifth street. I shall be glad to keep open house for that purpose, both as principal of the school and in my capacity of chairman of the local Special Education Department."

A new edition of the work on "Formation and Development of Elementary English Sounds," by Caroline A. Yale, has been published by the Association, and it can now be supplied upon application. to the General Secretary. Price for single copies, 25 cents; five copies, $1.00.

A BOOK OF IDIOMS.

We have received from the author, Dr. J. L. Smith, of the Minnesota school, a small book containing the more common idioms in the language, illustrated by use in sentences. There is a difference of opinion in the profession as to the wisdom of deliberately and laboriously teaching idioms, drilling upon them until they are individually mastered. There is little doubt that the work may be overdone, with the result that instead of the pupil's language being made smoother and more natural through the use of idioms, as is intended, it comes to have qualities that are awkward and unnatural to an extreme little short of the ridiculous. Our own thought is that idioms as a distinct branch of instruction should be treated by the teacher from the point of view of making them understood *in reading* or *in conversation*, not requiring the pupil to use them, nor expecting him to do so, except spontaneously and as he may elect, to meet his real needs for thought expression. The pupil should be able at all stages to read or to understand what others say to a far greater extent than he is able to give back. We are all able to do that, else we could all be essayists and orators in our use of language. And the book before us may be used with this in view, it giving convenient reading for covering the ground of English idioms—embracing the most common of them—systematically and in condensed form. The sample page of the booklet which follows will show its plan, and at the same time it can be seen how the illustrative sentences once read by the pupil may serve him without any drill in writing whatever to give him a reading understanding of them, which, to say the least, will be great gain at comparatively small cost. The page here given is one of 117, and the number of idioms or phrases included in the book is stated to be about fifteen hundred:

F. W. B.

go ahead
go along
go on
go off
go out
go down (2)
go hard
go halves
go without
go after
go abroad
go one's way
go into effect

We should not stop for obstacles when we are doing right, but should *go ahead.*

Some people like to *go along* the streets and look in the shop windows.

We should read the newspapers to know what is *going on* in the world.

Firearms sometimes *go off* by accident and kill people.

The furnace fires never *go out* during the winter.

The wind usually *goes down* after sunset.

The Maine *went down* in Havana harbor.

It *goes hard* with uneducated deaf people out in the world.

Children ought to *go halves* with their playmates when they have fruit or candy.

Poor children have to *go without* many things that they would like to have.

One of the boys *goes after* the mail twice a day.

Mr. Sheridan *went abroad* a few years ago.

If boys and girls are disobedient and discontented at home, their parents sometimes let them *go their way* before they are 21 years old.

The new law *went into effect* July 1.

THE NEW YORK STATE COMMISSIONERS' EXAMINATION.

In June, 1907, at the request of the State Education Department at Albany, the various Schools for the Deaf of New York State took the "fifth grade Commissioners' examination," based on the State elementary course of study for the public schools as published in the "Syllabus." While the "fifth grade" was designated as the test, any school had the privilege, as we understand it, of going beyond that grade in the examinations with any of its pupils. We have before us the complete list of questions and exercises of the fifth, sixth, and seventh grades, in printed form, which were sent to the schools in sealed envelopes to be opened and the questions to be handed to the pupils at the beginning of each test. Various conditions were imposed governing the manner of giving the tests which insured that the results of the examinations should show the real knowledge of the pupils. A number of the schools, we understand, made the test, sending their papers to the State Commission. Of these, two or three passed creditably on fifth-grade work with their advanced pupils, and in the case of individual pupils the sixth and seventh grades were creditably taken. The examinations thus of all the schools of the State by a single authority it would seem to us a splendid means for testing the work being done in them and furnishing an accurate and fair basis of comparison, thus stimulating to healthy emulation for the good of all concerned. The examinations as requested by the State education

authorities shows a most commendable spirit on their part of concern as to the quality of the work being done in all the Schools for the Deaf in the State, coupled with the evident desire to bring all schools under them to a common high standard of attainment. It is the modern principle of publicity that has accomplished so much for good in business, that is being extended to our own work, and there is no doubt that the principle is a correct one and worthy of universal application in at least all our State-supported and State-governed institutions. We shall be glad to learn that the examinations have been given again the coming June, and indeed that they are to be hereafter an annual affair. It will be of interest we feel to teachers to see the questions and exercises used at the last test, and while we can not spare room for presenting the several subjects in all the grades, we give them below for the fifth grade. It will be understood of course that the "spelling" test was given orally, thus to deaf children in the same manner as to hearing children, the pupils writing the words from reading them on the lips after seeing each pronounced twice. The other tests were written, the pupils following the printed slips : F. W. B.

SPELLING.

NOTE.—Pupils should be instructed that only proper names should begin with capitals.

1	arithmetic	14	villages	27	saliva	39	spinal
2	decimal	15	mountain	28	woolen	40	smooth
3	fraction	16	diamonds	29	thorax	41	organs
4	cubic	17	system	30	refuse	42	weather
5	percentage	18	seaport	31	circulate	43	kidneys
6	dividend	19	contract	32	employ	44	describe
7	island	20	objective	33	exercise	45	domestic
8	capital	21	business	34	health	46	plough
9	Caspian	22	spelling	35	treated	47	gardener
10	Egypt	23	topics	36	repaired	48	bean
11	products	24	spoonful	37	protected	49	briefly
12	ostrich	25	diagram	38	breathe	50	animals
13	important	26	sentence				

ARITHMETIC.

NOTE.—All the operations except very simple ones must be indicated.

1 Change ½, ¾, and ⅞ to decimal fractions.

2 Define (*a*) prime number, (*b*) mixed number. Give an example of each.

3 $\frac{2 \times 3 \times 8 \times 12 \times 15}{6 \times 4 \times 36}$ equals what? [Use cancelation.]

4 Find the L. C. M. of 16, 64, 96.

5 A certain farm is 140 rods long and 80 rods wide; how many square rods are there in the farm?

6 How many minutes are there in 3 yr. 5 mo. 6 da.?

7 From a bin containing 300 bu. of oats there were sold at one time 25 bu. 3 pk. 1 qt.; at another time 80 bu. 1 pk. 3 qt., and at another time 125 bu. 2 pk. 2 qt. How many bushels still remained in the bin?

8 What will it cost to lay a cement floor in a stable 40 feet long and 24 feet wide at 12½ cents per square foot?

9 How many cubic feet are there in a block 6 feet long, 3 feet wide and 2 feet high?

10 Henry Brown earns a salary of $900 per year; his board and other expenses are $40 per month. What will be his savings in 4 years?

GEOGRAPHY.

1 What empire is composed of islands? Name its capital city.

2 What and where are the following: (*a*) Bengal, (*b*) Everest, (*c*) Ganges, (*d*) Pekin, (*e*) Caspian?

3 Draw an outline map of Africa, showing principal water boundaries.

4 On the map drawn in answer to question 3, draw to represent Egypt and the Nile river.

5 Mention *three* wild animals of Africa and describe one of them.

6 Mention *two* large cities of Australia and *two* important products.

7 Locate (*a*) Lake Victoria, (*b*) Siam, (*c*) Madagascar, (*d*) New Zealand, (*e*) Calcutta.

8 Mention an important product of (*a*) China, (*b*) Japan, (*c*) India.

9 Name *two* large islands crossed by the equator.

10 Write briefly on *one* of the following: the Great Desert, Nile river, Chinese people, the ostrich.

WRITING.

The percentage in penmanship should be determined from the paper in English.

PHYSIOLOGY AND HYGIENE.

1 What is saliva? Of what use is it?

2 Name *two* things that will injure the teeth.

3 Why is woolen clothing worn in winter and cotton clothing in summer?

4 What organs are contained in the chest or thorax?

5 Why do many employers refuse to employ boys and young men who smoke cigarettes?

6 For what purpose does the blood circulate through the lungs?

7 Why is exercise necessary for good health?

8 When a bone is broken, how should it be treated? How is it repaired?

9 How is the brain protected?

10 What have you learned about the ear?

ENGLISH.

1 Contract the following: can not, do not, I would, it is, it was.

2 (*a*) Give the objective form of I, she, they, who, and use *two* of these objective forms in sentences.

3 Give a brief written reproduction of a short story read this term.

4 Write a letter to some business man, asking him for work.

5 Write a stanza (or verse) from one of the memory selections required. Pay particular attention to proper spelling, capitalization and punctuation.

6 Give a brief sketch of a character selected from some book read this term.

7 Write a composition containing at least *three* paragraphs, from one of the following topics: (*a*) My Christmas, (*b*) Our Summer Sports.

8 Which one of the books that you have read this year did you enjoy the most? Tell why.

Tongue manipulators, used by articulation teachers, for sale. Price, 40 cents each. Address the General Secretary.

ANNUAL MEETING OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

The Annual Meeting of the American Association to Promote the Teaching of Speech to the Deaf was held at the School for the Deaf at Rochester, N. Y., at 10 o'clock a. m., Wednesday, May 6, 1908.

The President, Dr. A. L. E. Crouter, called the meeting to order. The following members were in attendance: Dr. A. L. E. Crouter, President; Dr. Alexander Graham Bell, Miss Caroline A. Yale, Vice-Presidents; Dr. Z. F. Westervelt, Secretary; Miss Mary McCowen, Mr. Edmund Lyon, Mr. E. A. Gruver, Directors; F. W. Booth, General Secretary and Treasurer, and Misses Rebecca C. Sparrow, Elizabeth Van Ingen, Harriet E. Andrews, F. Elizabeth Brehm, and Leela M. Sutherland.

The call for the meeting, issued by the President and published in the April REVIEW, was read; following which the minutes of the last Annual Meeting, held in New York, were read and approved.

Letters of regret that they were unable to attend the meeting were read from Miss Harriet B. Rogers, Miss Sarah Fuller, Mrs. W. B. Weeden, Dr. Job Williams, Mr. E. McK. Goodwin, and Mr. R. O. Johnson.

The committee in charge of the matter of the transfer of the Alexander Melville Bell Memorial Fund to the Association made report. It was ordered that a complete report, including a transcript of all papers passed, be prepared and spread upon the minutes and published in the ASSOCIATION REVIEW.

The Treasurer made report of the Association funds passing through his hands in the period from May 26, 1907, to May 6, 1908.

A resolution of approval of the Visible Speech Department in the ASSOCIATION REVIEW was unanimously passed.

The election of Directors being in order, and nominations for the office of Director, previously submitted in writing to the President and Secretary, having been read, the election was proceeded with with the following result:

Directors elected to serve three years: Z. F. Westervelt, Sarah Fuller, E. A. Gruver, E. McK. Goodwin, E. G. Hurd, being all re-elections except in the case of Mr. Hurd, who takes the place of Mrs. W. B. Weeden, she having requested that her name be not considered for re-election to the office.

It was moved and carried that the Association in accordance

with the Constitution co-operate with the coming meeting of the Convention of American Instructors of the Deaf to be held at Ogden, Utah.

It was moved to recommend to the Board of Directors that a Summer Meeting, with full literary program, be held in the summer of 1909. Invitations received from Chicago and Mt. Airy, Philadelphia, for the meeting were referred to the Board for action upon them.

On motion the Annual Meeting was adjourned to meet again at a later hour.

Pursuant to call by the President, the Board of Directors met in session to consider a proposition from Dr. Bell and Mr. Chas. J. Bell, Trustee, that the American Association to Promote the Teaching of Speech to the Deaf take over, and through its officers administer the affairs of, the Volta Bureau in Washington. Various plans whereby this could be done were submitted and discussed, and a committee of two, consisting of Dr. A. L. E. Crouter and Mr. Edmund Lyon, was appointed to represent the Association in the steps to be taken to carry out the plan finally agreed upon.

The question of appointing the meeting place for the meeting to be held in the summer of 1909 was considered, and Chicago was selected. The exact time of the meeting will be decided later. Miss McCowan was appointed local committee of arrangements.

The General Secretary was authorized to prepare a general Circular of Information relative to the work of the Association and its history for the use of members.

The General Secretary was further authorized, in the matter of the republication of "The Raindrop," to proceed to secure subscriptions from schools, the subscription price to be fixed at $1.50 per copy, and it being understood that before the publication is undertaken the subscriptions shall reach a number to meet fully or approximately the money cost of the work.

The Treasurer presented the names of persons who had applied for membership in the Association since the January meeting of the Board. The persons named were duly elected. (See list printed elsewhere in this issue.)

Adjourned.

The Annual Meeting having reconvened, announcement was made of the action taken by the Board relative to the Volta Bureau. Dr. Bell gave an interesting account of the various steps leading to the creation of the Volta Bureau and of the part taken in the work by Mr. Hitz.

Resolutions upon the death of Mr. Hitz were adopted as follows:

WHEREAS, the death of the Hon. John Hitz, Superintendent of the Volta Bureau, Washington, D. C., having taken from us a charter member of the Association, and

WHEREAS, his work for many years having been entirely sympathetic and closely co-operative with the aims and purposes of the Association, be it

Resolved, That it is our feeling that in his death our Association and the cause of the deaf in general have sustained a distinct and irreparable loss; also, that we here give expression to our high appreciation of his character and personal worth.

Resolved, That in the Volta Bureau for the increase and diffusion of knowledge relating to the deaf, we recognize an institution of broadest philanthropy and of large and perpetual usefulness; and that we further recognize the debt we owe, and that the world will owe for all time, to its first Superintendent for the wise thought of its creation and the far-seeing and far-reaching plan of its work.

Resolved, That these resolutions be entered upon the minutes; that a copy of them be forwarded to the immediate family, and that they be published in the ASSOCIATION REVIEW.

Thereupon the Annual Meeting was adjourned.

F. W. B.

THE REPUBLICATION OF THE RAINDROP.

In accordance with instructions of the Board of Directors, circular letters have been sent out to the schools asking for subscriptions to "The Raindrop," which it is proposed to republish if a sufficient number are subscribed for to warrant the expense on the part of the Association. The price is put at $1.50 per copy, it being the purpose to put that value at least into the book in illustrations, quality of paper, size, etc. At this writing not nearly enough copies have been taken, and while a number of schools have made liberal subscriptions, it will be necessary for all who really wish the book brought out to give the project support by ordering copies at this time and in number as many as they can feel warranted in purchasing.

F. W. B.

Gallaudet College, at the recent Presentation Day exercises, conferred the honorary degree of L. H. D., Doctor of Humane Letters, upon Mr. W. H. Addison, Principal of the Glasgow, Scotland, School for the Deaf, Mr. F. D. Clarke, Principal of the Michigan School for the Deaf, and Mr. Chas. W. Ely, Principal of the Maryland School for the Deaf.

THE BOSTON EDUCATIONAL ASSOCIATION FOR DEAF CHILDREN.

Boston has had for many years an organization of citizens with the above name, and that it is a useful institution for promoting the welfare of the deaf is well known to all having intimate knowledge of the Horace Mann School, of which the Association is an adjunct. A report of the proceedings of the last Annual Meeting has come to us, and it is here presented as giving a statement of the aims of the Association as well as of the work it is actually accomplishing:

This Association has two aims—the supplementing of the regular school work socially, intellectually, and financially, and the aiding of graduates and past pupils in the business world.

The committee on social interests reported a most successful year. This committee has associated with itself a group of young ladies who have attended to the social work, meeting the older girls for conversation and social intercourse one afternoon in the week, taking pupils to museums and on pleasure trips, providing special art instruction for promising pupils, and ending the season with a party. The committee has also provided for the occasional supervision of the children in public conveyances and for visits of inquiry as to the welfare of past pupils.

The committee on employment has found work for some past pupils and is at present providing industrial training for several others.

The committee on education has expended the money intrusted to it by the Association in providing special instruction outside school hours for such pupils as seem most likely to benefit thereby, because of special needs. This committee is especially desirous of extending its work, and hopes for larger funds another year.

F. W. B.

The resignation of Mr. S. T. Walker from the superintendency of the Louisiana Institution is announced. Mr. Walker states that he has been led to this step on account of the condition of his health. His Board were unwilling to accept the resignation, and asked its recall, but Mr. Walker has asked that it take effect on September 1. We understand the new Superintendent will be elected by the incoming Board.

NEW MEMBERS.

The following-named persons have been elected to Active Membership in the American Association to Promote the Teaching of Speech to the Deaf, by vote of the Board of Directors. The list includes those elected since the last published report to May 6, 1908:

Alcorn, Sophia, Clarke School, Northampton, Mass.
Avondino, Josephine, Clarke School, Northampton, Mass.
Ballman, Mrs. John W., 1009 Dana Ave., Avondale, Cincinnati, Ohio.
Bhrehm, F. Elizabeth, School for the Deaf, Rochester, N. Y.
Brill, Tobias, School for the Deaf, Halifax, N. S.
Burch, Mary Allison, Clarke School, Northampton, Mass.
Campbell, Mary B., 1005 Otis Place, Washington, D. C.
Charles, Elva M., School for the Deaf, Jacksonville, Ill.
Dugane, Mary, 5 Cooke Street, Providence, R. I.
Fuller, Priscilla Alden, Mystic Oral School, Mystic, Conn.
Gamble, Matie B., Platteville, Wis.
Gilliatt, Almena, 2 Davis Place, Portland, Me.
Hill, W. S., Marquette, Mich.
Hunter, Pattie, Washington, Mason county, Ky.
James, Helen P., 169 South Main Street, Scranton, Pa.
Jones, Mrs. P. R., 13 Reesdale Street, Allston, Mass.
Kann, Frieda G., 806 Quincy Avenue, Scranton, Pa.
Kinnaird, Angie Cook, School for the Deaf, Northampton, Mass.
Kohlmoos, Dr. H., 1155 Broadway, Oakland, Cal.
Kooi, H., Josef Israelsstraat 38, Groningen, Netherlands.
Larson, N. K., School for the Deaf, Nyborg, Denmark.
Mallory, Mabelle H., School for the Deaf, Northampton, Mass.
Osserman, Simon E., 30 Broad Street, New York City, N. Y.
Palmer, Susie Parker, School for the Deaf, Northampton, Mass.
Plouer, Alice May, 868 N. Church Street, Jacksonville,, Ill.
Rao, T. Venkata, B. A., Headmaster, School for the Deaf, Mysore, India.
Roads, Lilian D., School for the Deaf, Northampton, Mass.
Rodwell, Thomas, Institution for the Deaf and Dumb, Belleville, Ontario.
Sampson, Ivanella H., Mystic Oral School, Mystic, Conn.
Sims, Louise, School for the Deaf, Indianapolis, Ind.
Stouffer, Martha Stoner, School for the Deaf, Northampton, Mass.
Suski, Peter M., 105 E. First Street, Los Angeles, Cal.
Sylvester, Elfrieda M., 306 Webster Avenue, Scranton, Pa.
Takamine, Caroline, 45 Hamilton Ter., New York City, N. Y.
Towler, Mary K., 742 N. State Street, Jackson, Miss.

SPEECH AND VOICE TRAINING FOR TEACHERS OF THE DEAF.

Mrs. Sarah Jordan Monro, special teacher of speech and the use of the voice in the Horace Mann School for the Deaf, in Boston, will open her summer class for a four weeks' course of instruction, on the first day of July next. For prospectus, address Mrs. S. J. Monro, Room 518, Pierce Building, Copley Sq., Boston, Mass.

WANTED, a position in a school for the Deaf as instructor in sloyd—Russian and Swedish systems taught—by a man experienced in Institution work. Address, Sloyd Teacher, care of the editor of the REVIEW.

Copies of "The Mechanism of Speech," by Alexander Graham Bell (second edition, with Synopsis and Index added), on sale at $1.20 per copy. Address orders to F. W. Booth, General Secretary, 1525 35th St., N. W., Washington, D. C.

Reprints in pamphlet form of "My List of Homophenous Words" (words that look alike on the lips), by Emma Snow, may be obtained through the office of the General Secretary. Price for single copies, 25 cents.

Teachers wishing positions and Superintendents wishing teachers may avail themselves of the office of the General Secretary of the American Association to Promote the Teaching of Speech to the Deaf, so far as it may be of service to them. The General Secretary aims to keep a list of teachers, and one of Superintendents, belonging to the above classes, ready for use by any person who may write for them.

THE ASSOCIATION REVIEW is a publication of the American Association to Promote the Teaching of Speech to the Deaf. It is sent free to Active Members of the Association. Active membership is obtained upon payment to the Treasurer of the membership fee of two dollars ($2), or its equivalent in foreign currency—8s. 4d. in English money; 8m. 2pfg. in German money; 10fr. 2c. in French money; 7 kr. 50 ore. in Norwegian, Swedish, and Danish money; and 10l. 2c. in Italian money. Postal money orders should be drawn on Washington, D. C., in favor of F. W. Booth.

A BELL SYMBOLS STORY BOOK

IT is in contemplation to publish in the **Bell Symbols** a book of **Stories and Nursery Rhymes.**

The stories and rhymes will be similar to those now running in the Melville Bell Memorial Department of the REVIEW, and will be profusely illustrated. It is the aim to produce an attractive **Story Book,** which will compare favorably in general get-up with any, and which will appeal to old and young readers. Its price to members of the ASSOCIATION will be 50 cents per copy, and to the general public, 75 cents per copy.

As the edition will be limited, intending purchasers should fill out the accompanying blank form and mail to the GENERAL SECRETARY of the ASSOCIATION, 1525 35th Street, Washington, D. C.

....., *1908.*

F. W. BOOTH, *General Secretary,*
1525 THIRTY-FIFTH ST., WASHINGTON, D. C.:

When published send me ..... *copies of* **"Stories and Nursery Rhymes in Bell Symbols."**

Signed .....

.....

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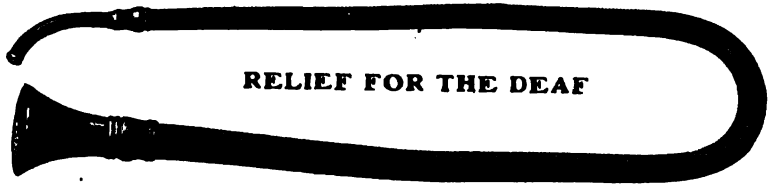

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Its aim is to teach the pupil to follow quickly and intelligently all general conversation. This method, in distinction to other methods, regards the *movements* of the organs of speech the important factor. In normal speech, positions are of such momentary duration as to be hardly perceptible, and little time is spent in mastering *positions;* the pupil is trained from the first lesson to follow *movements.*

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The system is particularly designed for beginning work, with which it has been used with especial success.

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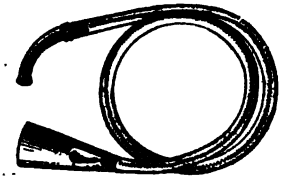

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Prof. James Denison, A. M., Principal of the Kendall School for the Deaf, Kendall Green, Washington, D. C., says: "I am very much pleased with the Vibratory Conversation Tube; it far exceeds my expectation. I congratulate you on having invented it. It will prove a boon to the deaf, and should be introduced in all the Schools for the Deaf."

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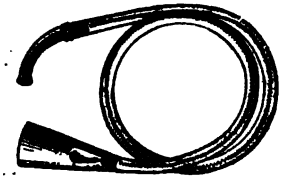

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LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Circular of Information, No. 1, "The Word Method," by David Greenberger $0.25

Circular of Information, No. 2, "The Lyon Phonetic Manual," by Edmund Lyon ..... .25

Circular of Information, No. 3, "The Whipple Natural Alphabet," by Miss Daisy M. Way..... .10

Report of the First Summer Meeting held at Lake George..... .60

Containing—Lectures, by Dr. A. Hewson, on "Anatomy of the Chest," "The Lungs, Trachea, and Larynx," "Anatomy of the Pharynx, and Mouth"; by Hon. Gardiner G. Hubbard, on "History of the Education of the Deaf"; by Dr. Alexander Graham Bell, on "The Throax and Larynx," "The Pharynx and Mouth in their Relation to Speech," "The Functions of the Epiglottis and Soft Palate," "Visible Speech as Taught to the Deaf," "Consonants," "Vowels, Glides, and Combinations," "Speech Reading"; by Miss Caroline A. Yale, on "History and Development of Articulation Teaching in America," "Methods of Articulation Teaching in Clarke Institution—Early Work," same subject "Later Work," by Miss Rebecca E. Sparrow; by Miss Sarah Fuller, on "How Helen Keller was Taught," "Infant Schools for the Deaf," "Articulation Teaching in the Primary Classes of the Horace Mann School"; by Dr. A. L. E. Crouter, on "History of Oral Work in the Pennsylvania Institution"; by Dr. Z. F. Westervelt, on "Speech in a Manual Alphabet School"; by Paul Binner, on "Harmonics of the Voice." Papers, by Miss Daisy Way, on "The Whipple Natural Alphabet," by Miss Elsa L. Hobart, on "Plan to Encourage Speech," by Miss Ida H. Adams, on "The Blackboard as an Aid in the Use of Spoken Language." School of Practice Work. Answers to Questions in the Question Box. Discussions of various papers.

Report of the Second Summer Meeting held at Lake George..... .40

Containing—Lectures, Addresses, and Papers: by Dr. Alexander Graham Bell, on "Report on Articulation Teaching in America"; by Miss Harriet E. Hamilton, on "Speech-Reading in the Rochester School"; by Mr. David Greene, on "How We Breathe," "How We Speak," "How We Teach Deaf Children to Speak"; by Dr. Harrison Allen, on "Errors of the Muscles of the Parts Used in Speech," "The Tongue"; by Dr. A. Hewson, on "The Anatomy nad Physiology of the Ear"—illustrated, "The Anatomy and Physiology of the Palate, Pharynx, and Tongue"—illustrated, "Physiology of Hearing"; by Mr. S. G. Davidson, on "Reading: its Influence upon the Language and Speech of the Deaf"; by Mr. J. A. Gillespie, on "Aural Instruction"; by Miss Caroline A. Yale, on "How can We best Fit Ourselves to Teach Speech to the Deaf"; by Mr. Edmund Lyon, on "Phonetics"; by Dr. E. M. Gallaudet, on "What Constitutes Success in Oral Teaching?" School of Practice Work. Answers to Questions in the Question Box. Discussions of various papers.

No Report of the Third Summer Meeting, held at Chicago during the World's Fair, was published, there being no literary program presented at that meeting.

(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

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ELEVENTH SECTION—"Improvement and Development of the Hearing," by Lillie Edgerton Warren; "The Higher Instruction of the Deaf," by Mr. J. D. Kirkhuff; "Articulation Teaching in the Wisconsin School for the Deaf," by Miss Almira I. Hobart..... .10

TWELFTH SECTION—"The Teaching of Speech in the Hartford School," by Miss Adelia C. Fay; "The History of Articulation Teaching in the New York Institution for the Instruction of the Deaf and Dumb," by Enoch Henry Currier, M. A..... .10

(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

THIRTEENTH SECTION—Miss Sullivan's Paper on Helen Keller..... $0.10

FOURTEENTH SECTION—Opening Exercises..... .10

Report of the Fifth Summer Meeting, held at Mt. Airy..... .40

Containing—Addresses, Lectures, and Papers: by Dr. Philip G. Gillett, on "Some Notable Benefactors of the Deaf"; by Miss Harriet B. Rogers, on "Early Experiences in Teaching the Deaf to Speak"; by M. Magnat, "Historical Sketch of the Teaching of Deaf-Mutes in France"; by Dr. Thomas Arnold, on "Fundamental Differences between Sound and Touch as Languages"; by Miss Emma L. Plympton, on "Manipulation in Articulation"; by Miss Kate F. Hobart, on "Learning to Talk—First Year Work"; by Miss Mabel E. Adams, on "Learning to Talk—Second Year Work"; by Miss Ida H. Adams, on "Learning to Talk—Third Year Work"; by Mr. Weston Jenkins, on "Primary Language in Manual Training"; by Miss Elsie M. Steinke, on "School Room Decoration"; by Miss Josephine Lackore, on "Observations on Oral Methods of Instruction"; by Miss Anna C. Allen, on "Geography Teaching—Theories that have Stood the Test of the Class-Room"; by Mr. F. W. Booth, on "Primary Arithmetic for Deaf Children"; by Mr. S. G. Davidson, on "Advanced Work in Language and Literature with Oral Classes"; by Miss Katherine Fletcher, on "Text-Books in History"; by Dr. A. L. E. Crouter, on "Shall the Deaf Seek Higher Instruction in Schools for the Hearing?"; by Dr. Thomas A. Humason, on "The Essential Factor in Mental Development"; by Miss Helen Keller, on "The Value of Speech to the Deaf"; by Dr. Harrison Allen, on "Some Further Observations on the Study of Adenoid Growth in Connection with Deaf-Mutism"—illustrated, "A study of the Motions of the Soft Palate"—illustrated; by Dr. Lightner Witmer, on "Experimental Studies of Mental Content and the Processes of Thinking"; by Mr. Harris Taylor, on "Child Study"; by Mr. W. E. Taylor, on "Beginnings in Aural and Oral Training"; by Mr. J. A. Gillespie, on "Report of Auricular Instruction in American Institutions"—statistical; "Reports on Oral Instruction in American Schools."

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(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

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(Continued on next page.)

LIST OF PUBLICATIONS

OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(Continued from preceding page.)

by Adolph Koenig; "Defects of Childhood," by Richard O. Johnson; "The Importance of Physical Training for Deaf Children," by Grace G. Green; "The Use of Pictures in Advanced Grades," by Harris Taylor; "Arithmetic—The Equation Method," by A. U. Downing; "Advanced Geography—Feeding the World," by Edwin Stanley Thompson; "Normal Training for Oral Teachers of the Deaf," by F. W. Booth; "The Education of the Deaf-Blind," by J. W. Jones; "The Proper Treatment of the Verb," by S. G. Davidson; "What We have done in our Library Clubs," by Candace A. Yendes; "Some Errors in Arithmetical Methods," by Barton Sensenig; "Defective Hearing, Aids for its Improvement," by Chevalier Jackson; "Speech Work for Older Pupils," by Kate H. Fish; "How best to Secure Intelligent Speech for Deaf Children," by Mary McGowen; "The Classification of Pupils and Methods in Denmark," by Anders Hansen; "The Education of the Deaf in Norway," by Eyvind Boyesen; "Alexander Melville Bell," by Sarah Fuller; "The Progress of Speech Work in Foreign Schools," by John Hitz.

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THE ASSOCIATION REVIEW

PUBLISHED BY THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF

FRANK W. BOOTH, EDITOR

October, 1908

The Real Romance of the Telephone, or Why Deaf Children in America Need no Longer be Dumb, XXVIII - FRED DE LAND 343

Special Report upon the Deaf, Based on the Returns of the Twelfth Census—Continued - ALEXANDER GRAHAM BELL 349

Is the Sign-Language a Necessity Called Forth by Nature and Circumstances - - - - - EUGENE SUTERMEISTER 365

A Series of Tests in Lip-Reading - - - - - A. HANSEN 381

Eyestrain and Its Consequences - - - - - J. ERMOLOFF 385

Eduard Walther - - - - - - - - A. HANSEN 388

Contemporary Thought - - - - - - - - - - - 391

The Institution Press - - - - - - - - - - - 408

Books, Periodicals, and Reports - - - - - - - - - - 411

Meeting of the Department of Special Education, N. E. A. - - - - - - CORNELIA D. BINGHAM 414

Meeting of the Convention of American Instructors of the Deaf - - - - - - - - - F. W. BOOTH 416

ꝺlɯƷlɯ ꝺlɯ ꝺlƷƒɯlɯ ɯlɔIvɔꝺlɯɔ> - - - - - - 419

Editorial Comment - - - - - - - - - - - - 431

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OCTOBER, 1908.

THE REAL ROMANCE OF THE TELEPHONE, OR WHY DEAF CHILDREN IN AMERICA NEED NO LONGER BE DUMB.[1]

BY FRED DE LAND.

CHAPTER XXVIII.

THE FUNDAMENTAL TELEPHONE PATENT IS GRANTED.

In the belief that his Canadian friends would surely take the action they had promised, the application completed in December and sworn to in January was held in the office of the Washington attorneys by direction of Graham Bell, until early on the morning of February 14, 1876, when it was filed in the Patent Office and was received in the Examiners' room before noon of the same day.

On the morning of the same day that the attorneys of Graham Bell filed his application for the fundamental telephone patent, Elisha Gray was in the offices of his patent attorneys in Washington, and there dictated to a stenographer the substance of a caveat based on a sketch he had conceived and made three days before, that is, three weeks after Graham Bell had signed and sworn to his complete application for a patent. The dictation commenced after ten o'clock, and when completed was transcribed in long-hand in formal phraseology by the stenographer. This transcription was then revised by Mr. Gray and attorney Baldwin, then rewritten in long-hand, and then sworn to. At two o'clock in the afternoon it was not ready for filing, but the fee for filing was paid, and the clerk noted on the fee ticket: "Paper will be filed later today." The document did not reach the examiners' room until the next day after Graham Bell's had been received.

[1] Commenced in the October, 1905, number.

Gray's document was not a complete specification for a patent, but merely a caveat, and therein he did not point out how his receiver could reproduce speech, because he did not know how speech could be transmitted electrically until taught by the text of Graham Bell's patent, which he studied after the remarkable demonstrations at the Centennial. The caveat described "certain improvements in the art of transmitting vocal sounds telegraphically," and Mr. Gray claimed that: "It is the object of my invention to transmit the tones of the human voice through a telegraph circuit, and reproduce them at the receiving end of the line, so that actual conversation can be carried on by persons at long distances apart."

Later on, after a long and thorough investigation the Patent Office decided that: "It is prerequisite to the grant of a patent that it shall convey to the public the knowledge necessary to enable it to practice the invention, and it is just here that Bell and Gray differ. If Gray had obtained a patent for his instrument which he now says can transmit and reproduce speech, the public would not have been in any manner enlightened as to this art.... When called upon to explain the construction of the apparatus thus ambiguously outlined in his caveat, Gray confesses that it was a general idea, not clearly defined in all its details, and based upon a theory which *has since proved to be false.* The instrument was never constructed by him."

Gray frankly admitted that after the remarkable tests at the Centennial, he tried for the first time to construct a telephone according to his own description in his caveat. But not succeeding in transmitting speech with his device, he dropped the subject for more than a year.

The reason for referring to this unpleasant subject here is that after stating that he "thought it would be impossible to make a practical working speaking-telephone on the principle shown by Professor Bell" at the Centennial, and then, after admitting verbally and in writing that Alexander Graham Bell had invented the electric-speaking telephone, and after publicly giving Bell "full credit for the talking feature of the telephone," Elisha Gray was induced to claim priority of invention by some men who hoped to profit by a competitive warfare, and felt "that some advantage or benefit might be derived from such a claim of priority of invention."

And through the duplicity of one of its examiners, even the United States Patent Office was unconsciously led to erroneously and momentarily favor Gray as against Bell in the following illegal manner. The patent law concerning interferences between applications and caveats read: "Such caveat shall be filed in the confidential archives of the office and preserved in secrecy, and shall be operative for the term of one year *from the filing thereof;* and if application is made *within the year* by any other person for a patent with which such caveat will in any manner interfere, the Commissioner shall deposit the description, specification, drawings and model of such application in like manner in the confidental archives of the office, and give notice thereof by mail, to the person by whom the caveat was filed."

Graham Bell's application was not filed *within the year* "from the filing" of Gray's caveat, but preceded "the filing thereof" and was in no manner subject to that caveat. Yet Examiner Wilber, in an evident desire to aid Elisha Gray, notified Graham Bell's attorneys that: "It is found that the first, fourth and fifth clauses of claim relate to matters described in a pending caveat. The caveator has been notified to complete, and this application is suspended for ninety days, as required by law."

The Commissioner of Patents being misled by Wilber's illegal notice, notified Elisha Gray that an application had been made that "*apparently interferes*" with the invention described in his caveat. But Wilber, over his official signature of Examiner and in violation of the rules of the office, wrote to Gray that: "The matters in the application referred to seem to conflict with your caveat in these particulars, viz.: 1st. The receiver set into vibration by undulatory currents. 2d. The method of producing the undulations by varying the resistance of the circuit. 3rd. The method of transmitting vocal sounds telegraphically by causing these undulatory currents, etc."

In other words, he, Wilber, an official of the Patent Office, deliberately conveyed to Gray the substance of Graham Bell's invention to aid Gray to work up his application for a patent.

Graham Bell's attorneys wrote to the Commissioner of Patents: "We have inquired the date of the filing of the caveat (inasmuch as we are entitled to the knowledge), and find it to be February 14, 1876, the same day on which our application was filed. If our application was filed earlier in the day than was the

caveat, then there is no warrant for the action taken by the office."

An investigation resulted in Wilber reporting to the Commissioner under date of February 25, that: "The cash blotter in the chief clerk's room shows conclusively that the application was filed some time earlier on the 14th than the caveat. The application was received also in 118 *by noon* of the 14th, the caveat not until the 15th."

The same day the suspension of Graham Bell's application was withdrawn, as it was evident that that application was filed before the caveat existed. His attorneys had notified him, however, to come to Washington to defend his claims. He did so at considerable expense and sacrifice of time, and arrived in Washington only to learn that the "interference" had been dismissed the day previous. Thus Graham Bell took no part orally or by letter in the unjust temporary suspension of his patent rights.

Incidentally it may be added that on March 5, 1877, a year after the fundamental patent was issued, Elisha Gray wrote to Graham Bell: "I gave you full credit for the talking feature of the telephone in my lecture in McCormick Hall, February 27.... I do not, however, claim even the credit of inventing it, as I do not believe a mere description of an idea that has never been *reduced to* practice,—in the *strict sense* of that phrase,—should be dignified with the name invention."

Graham Bell hurried back to Boston and concentrated time and attention on his classes and private pupils. On March 7, 1876, the fundamental telephone patent was issued, but so pressing were his professional duties that he paid but slight attention to this official action that stamps him as the true inventor of the electric-speaking telephone. Nor did any one else appear to pay any attention to it. It was only another added to the endless stream of patents issued by our government. What difference would one patent more or less make? Writing on this subject in 1883, a journalist who was familiar with the entire history of the telegraph and the telephone wrote: "The issuance of Bell's patent on March 7, 1876, attracted little or no attention in the telegraphic world. The inventor was practically unknown in electrical circles, and his invention was looked upon, if indeed any notice at all was taken of it, as utterly valueless. In fact, we believe that not a single person could have been found, however

well versed in telegraphy or electricity, who would have given a hundred dollars for the patent within three months after its issue.... We very much doubt if it could now (1883) be purchased for $25,000,000. It is probably by far the most valuable single patent which has ever been issued."

When the fundamental patent was issued on March 7, 1876, the world learned for the first time how a certain effect of one of the forces of nature could be made useful, and how to make the apparatus and apply the method that would produce the desired results. And in all the intervening years no better method has been found, though no expense has been spared in the effort to solve the problem, and scientists, electricians, and mechanicians have vainly striven to find some other way, any other way, to electrically transmit speech over long distances.

In use on all telephone lines are certain devices not invented by Graham Bell, refinements or conveniences of system or method. But the broad fundamental method conceived by Graham Bell in 1874, underlies the electrical transmission of speech in any form and in any portion of the civilized world, while his means for speech-transmission still forms the essential portion of all telephone sets.

The form of the original crude telephone was improved by Graham Bell, and it was Graham Bell who substituted a metal for a membrane diaphragm. And twenty thousand of Graham Bell's magneto telephones, without any other man's improvements in them, were in commercial use before there went into public use any one of the many forms of variable resistance transmitters, each and all of which operate on the same method devised and described by Graham Bell in his specifications. And Commissioner of Patents Hall wrote: "The Bell specification is word for word the same as his patent. I have personally examined the specification, and find that it is written upon both sides of the paper in a clear fair hand, continuously from page to page."

And the Supreme Court of the United States decided that Graham Bell, "in his specification did describe accurately and with admirable clearness his process, that is to say, the exact electrical condition that must be created to accomplish his purpose, and he also described with sufficient precision to enable one of ordinary skill in such matter to make it, a form of apparatus which, if used in the way pointed out, would produce the

required effect, receive the words, and carry them to and deliver them at the appointed place. The particular instrument which he had and which he used in his experiments did not, under the circumstances in which it was tried, reproduce the words spoken, so that they could be clearly understood, but the proof is abundant and of the most convincing character, that other instruments, carefully constructed and made exactly in accordance with the specification, without any additions whatever, have operated and will operate successfully. A good mechanic of proper skill in matters of the kind can take the patent and, by following the specification strictly, can, without more, construct an apparatus, which, when used in the way pointed out, will do all that it is claimed the method or process will do."

(*To be continued.*)

SPECIAL REPORT UPON THE DEAF, BASED ON THE RETURNS OF THE TWELFTH CENSUS.[1]

PREPARED BY ALEXANDER GRAHAM BELL, AS EXPERT SPECIAL AGENT OF THE CENSUS OFFICE.

(*Continued from page 255.*)

The married deaf.—The figures with which we have hitherto been dealing relate to the whole of the deaf, including the single, married, widowed, and divorced. Tables LV,[2] LVI,[2] LVII,[2] and LVIII[2] relate to the married deaf alone and to conditions of marriage that affect the production of deaf offspring. Tables LVI and LVII summarize the detail figures given in Table LV.

From Table LVII it appears that 34,206 married deaf persons were reported in the census of 1900. Of these, 57.7 per cent were males and 42.3 per cent were females; 37.8 per cent were deaf from childhood (under 20), 58.5 per cent became deaf in adult life, and in 3.7 per cent of the cases the period of life when deafness occurred was unknown.

Of the 12,924 cases deaf from childhood, 51.5 per cent were males and 48.5 per cent were females. Of the 20,030 cases deaf from adult life, 61.6 per cent were males and only 38.4 per cent were females (Tables LV and LVI). It thus appears that the majority of the deaf who marry are males; and the disproportion of the sexes in this respect is most manifest in the case of the deaf from adult life, of whom 61.6 per cent were males.

Out of a total of 34,206 married deaf persons, 31,334 answered the question relating to deaf relatives and 2,872 did not (Table LVII). The following percentages relate to the stated cases:

a or b relatives.—10,888, or 34.7 per cent, of the married deaf had deaf brothers, sisters, ancestors, uncles, aunts, cousins, or more distant relatives, and 20,446, or 65.3 per cent had no *a* or *b* deaf relatives (Table LVII).

c relatives.—437, or 1.4 per cent, of the married deaf had deaf children, and 30,897, or 98.6 per cent, had no deaf children—that is, they either had hearing children or no children at all (Table LVII).

[1] A reprint of "Special Reports: the Blind and the Deaf," in the part relating to the Deaf; issued by the Department of Commerce and Labor, Bureau of the Census, Washington, 1906. Commenced in the October, 1906, number of the REVIEW.

[2] Omitted from this republication.

d relatives.—4,965, or 15.8 per cent, of the married deaf had deaf husbands or wives, and in 26,369 cases, or 84.2 per cent, the husbands or wives were not deaf—that is, they were hearing persons (Table LVII).

Of the 4,965 married deaf who had deaf husbands or wives, 4,394, or 88.5 per cent, were deaf from childhood (under 20); 477, or 9.6 per cent, became deaf in adult life; and in 94 cases, or 1.9 per cent, the period of life when deafness occurred was unknown (Table LVII).

Of the 26,369 married deaf whose husbands or wives were not deaf, 7,997, or 30.3 per cent, were deaf from childhood; 17,688, or 67.1 per cent, were deaf from adult life; and in 684 cases, or 2.6 per cent, the period of life when deafness occurred was unknown (Table LVII).

Thus the vast majority of the married deaf who had deaf husbands or wives (88.5 per cent) were deaf from childhood, and about two-thirds of the married deaf whose husbands and wives were not deaf (67.1 per cent) were persons who lost hearing in adult life. It will also be noticed that the majority of the married deaf who had deaf husbands or wives (68.3 per cent) were deaf from early childhood (under 5) (Table LVII), and belong naturally to the class deaf and dumb. They represent intermarriages of deaf-mutes with one another.

In studying the marriages of the deaf, and the influence of these marriages upon the offspring, the plan has been adopted of calculating the percentage having deaf children upon the basis of a total which includes the males and females considered, instead of noting separately the percentage of males and the percentage of females having deaf children. The percentage derived from the summation of the two classes is more reliable than that derived from either class alone, because based upon larger numbers. And the percentages express not merely the proportion of deaf persons who have deaf children, but the proportion of families containing deaf children. This is an important point and worthy of special consideration.

In regard to the absolute numbers involved it will of course be noticed that the figures expressing the number of deaf persons who have deaf children do not represent the number of deaf children born to them, even if we assume that each person had only one deaf child—which would be an underestimate. Some of the males and females included were undoubtedly the parents of the same chil-

dren—two parents to one child. Nor do these figures represent the number of families having deaf children, which is necessarily less than the number of married persons composing them; and yet the percentage of persons having deaf children expresses the percentage of families having deaf children, even though the absolute number of families may be unknown. This will be obvious from the following considerations:

Let there be one hundred families, and let one of them contain deaf children; then the proportion of families having deaf children is 1 per cent.

Case 1.—Now assume that in each of these families only one of the married partners was deaf; then 100 married deaf persons in all would be recorded, of whom 1 had deaf children. In this case the proportion having deaf children would be 1 per cent, thus corresponding with the percentage of families.

Case 2.—Next assume that in each of the families considered both of the married partners were deaf; then 200 married deaf persons in all would be recorded, of whom 2 had deaf children. But the proportion having deaf children would remain at 1 per cent, thus still corresponding with the percentage of families.

Case 3.—These are extreme cases, and there is only one other supposable case between them, namely, that in some of the families the married partners were both deaf, and that in others only one of the married partners was deaf. In this case also it is obvious that the percentage of deaf persons having deaf children would correspond to the percentage of families.

In the case of the married deaf we do not know exactly the total number of families involved or the exact number of families containing deaf children; but still we can estimate these numbers with a sufficient approximation to the truth to enable us to test the accuracy of the conclusions noted above.

Case 1.—The 26,369 married deaf persons whose husbands or wives were not deaf constituted, of course, 26,369 families, and the 278 persons among them who had deaf children also evidently constituted 278 families; so that here the percentage of persons having deaf children is obviously the same as the percentage of families containing deaf children.

Case 2.—In the case of the 4,965 married deaf persons who had deaf husbands or wives, 2,501 were males and 2,464 were females; so they constituted at least 2,501 families. There may have been more, but certainly not less. In the case of the 159 persons among

them who had deaf children 79 were males and 80 were females; so that these persons constituted not less than 80 families.

$$\frac{4965}{159} = \text{the ratio of persons.}$$

$$\frac{2501}{80} = \text{the (approximate) ratio of families.}$$

These ratios are substantially the same, for—

$$4965 : 159 :: 2501 : 80.09.$$

Case 3.—In the case of the 31,334 married deaf persons constituting the stated cases in Table LVII, 18,091 were males and 13,243 were females. These persons therefore constituted at least 18,091 families. In the case of the 437 persons among them who had deaf children 250 were males and 187 were females; so that they constituted at least 250 families. There may have been more, but certainly not less.

$$\frac{31334}{437} = \text{the ratio of persons.}$$

$$\frac{18091}{250} = \text{the (approximate) ratio of families.}$$

These two ratios are very nearly the same, for—

$$31334 : 437 :: 18091 : 252.3.$$

Conditions affecting the production of deaf offspring.—Table LVII shows that out of 31,334 married deaf persons 437, or 1.4 per cent, had deaf children. This means that on the average 1.4 per cent of the marriages contracted by deaf persons are productive of deaf offspring. Out of every 100 families formed by these marriages, 1.4 contain deaf children.

Sex.—Out of 18,091 married deaf males 250, or 1.4 per cent, had deaf children. Out of 13,243 married deaf females 187, or 1.4 per cent, had deaf children (Table LVII).

From this it appears that the sex of the deaf partner in marriage does not appreciably affect the proportion having deaf children, although it should be noticed that in the case of those having *a b d* deaf relatives the percentage having deaf children is more than twice as great among the males as among the females (males, 12.7; females, 6) (Table LVIII). The totals, however, on which these latter percentages are based are comparatively small, very little exceeding 100; whereas the percentages for the whole of the married males and females are based upon many thousands of cases, and show no difference in this respect between the males and females.

The sex of the deaf parent alone, without other complicating conditions (like *a b d* deaf relatives) does not seem to be a factor affecting the proportion having deaf children.

Males	1.4
Females	1.4

Degree of deafness.—Out of 8,022 married deaf persons who were totally deaf 190, or 2.4 per cent, had deaf offspring; and out of 23,312 married deaf persons who were partially deaf 247, or 1.1 per cent, had deaf children (Table LVII).

It thus appears that the proportion having deaf offspring is more than twice as great among the totally deaf as among the partially deaf married persons. Table LIII[1] shows that the majority of the deaf who have deaf offspring are partially deaf; but this evidently results not from any greater liability on their part to produce deaf offspring, but from the fact that the partially deaf are more numerous than the totally deaf in the whole deaf population. Among the married deaf 25,875 were partially deaf and only 8,331 totally deaf (Table LVII).

Totally deaf	2.4
Partially deaf	1.1

Period of life when deafness occurred.—Out of 12,391 married deaf who were deaf from childhood (under 20) 238, or 1.9 per cent, had deaf children. Out of 18,165 married deaf who became deaf in adult life 188, or 1 per cent, had deaf children (Table LVII).

Out of 5,459 married deaf persons who lost hearing before the age of 5, 159, or 2.9 per cent, had deaf children. Of these, 1,815 were congenitally deaf and 3,644 became deaf after birth and before reaching the age of 5. Of the congenitally deaf cases, 91, or 5 per cent, had deaf children. Of the noncongenitally deaf cases, 68, or 1.9 per cent, had deaf children (Table LVII).

It thus appears that the tendency to transmit the defect is greater among the deaf from childhood than the deaf from adult life. It is still greater among the deaf from early childhood (under 5), all of whom belong naturally to the class deaf and dumb, and greatest of all among the deaf from birth (the congenital cases).

Childhood (under 20)	1.9
Adult life (20 and over)	1.0
Early childhood (under 5)	2.9
Congenital	5.0
Noncongenital (under 5)	1.9

[1] Published in the June, 1908, number of the REVIEW.

a, b, or d relatives.—Out of 14,407 married deaf persons who had deaf relatives (*a, b,* or *d*), 286, or 2 per cent, had deaf children. Out of 16,927 who had no deaf relatives (*a, b,* or *d*), 151, or 0.9 per cent, had deaf children (Table LVII).

It thus appears that the proportion having deaf children is more than twice as great among the married deaf who have deaf relatives (*a, b,* or *d*) as among those who have no *a, b,* or *d* deaf relatives.

Deaf relatives (*a, b,* or *d*)	2.0
No deaf relatives (*a, b,* or *d*)	0.9

a relatives.—There were 9,308 married deaf persons who had deaf brothers, sisters, or ancestors. Of these, 189, or 2 per cent, had deaf children, but it will be observed that the total includes all who have *a* relatives. Some of the persons referred to had also *b* or *d* relatives. To ascertain the effect of the *a* element alone we should exclude the *b* and *d* elements from consideration. Out of 6,577 married deaf who had *a* relatives alone without *b* or *d* relatives (*a* — —), 84, or 1.3 per cent, had deaf children (Table LVII).

b relatives.—Out of 3,344 married deaf persons who had uncles, aunts, cousins, or other more distant relatives deaf (*b*), 72, or 2.2 per cent, had deaf children; but the total includes persons who had also *a* or *d* relatives. Excluding the *a* and *d* elements, we find that 1,343 of the married deaf had *b* relatives alone, without *a* or *d* relatives (— *b* —); and of these, 14, or 1 per cent, had deaf children (Table LVII).

d relatives.—Out of 4,965 married deaf who had deaf husbands or wives, 159, or 3.2 per cent, had deaf children. The total includes persons who had *a* or *b* deaf relatives; and if we exclude these, we find 3,519 married deaf with deaf husbands or wives, but no *a* or *b* relatives deaf (— — *d*). Of these, 77, or 2.2 per cent, had deaf children (Table LVII).

Even in this case, however, we have not eliminated the effect of *a* or *b* relatives; for many of the deaf husbands or wives considered undoubtedly had *a* or *b* deaf relatives. The census returns give us no information concerning these husbands or wives beyond the bare fact that they were deaf.

No a, b, or d relatives.—Out of 16,927 married deaf persons who had no *a, b,* or *d* relatives deaf, 151, or 0.9 per cent, had deaf children (Table LVII).

In considering the significance of deaf relatives as an indication of the liability of a deaf person to produce deaf offspring the

following seems to be the order of importance of the *a*, *b*, and *d* elements considered separately: The largest proportion having deaf children is found among the married deaf who have deaf husbands or wives (but no *a* or *b* relatives); next come those having *a* relatives (but not *b* or *d*); then those having *b* relatives (but not *a* or *d*). The smallest proportion having deaf children is found among those who have neither *a*, *b*, nor *d* relatives:

— — *d*	2.2
a — —	1.3
— *b* —	1.0
— — —	0.9

Combinations of a, b, and d relatives.—From these facts we would naturally anticipate that the largest proportion having deaf children would be found among those having both *a* and *b* relatives who married deaf husbands or wives, and that the proportion having deaf children would be successively smaller where other combinations of *a*, *b*, or *d* occurred in the following order: *a b d*; *a* — *d*; — *b d*; — — *d*; *a b* —; *a* — —; — *b* —; — — —. And this we find to be the case. The following figures show the percentage of married deaf persons having deaf children where these combinations of deaf relatives occurred (Table LVIII).

a b d	9.5
a — *d*	5.5
— *b d*	2.5
— — *d*	2.2
a b —	1.9
a — —	1.3
— *b* —	1.0
— — —	0.9

We should also expect to find a still larger percentage having deaf children where the *a b d* elements are combined with other elements found to be significant in this connection—like total deafness and deafness occurring at an early period of life, and this we find to be the case. For example: Table LVI records 181 married deaf persons who were totally deaf from birth, and who had *a b d* relatives deaf. Of these, 18, or 9.94 per cent, had deaf children.

Totally deaf from birth, *a b d*	9.94

The significance of the percentages will be apparent by applying the results to the whole married population of the United States. We can calculate how many families containing deaf children would be found among the married people of the United States if they had

the same liability to the production of deaf offspring that is found in the case of the married deaf.

More than 13,000,000 married males are returned in the census of 1900, and more than 13,000,000 married females. If only 1 per cent of these persons should have deaf children, we would have in the United States more than 130,000 families containing deaf children.

130,000 equal 1 per cent.
260,000 equal 2 per cent.
390,000 equal 3 per cent.
520,000 equal 4 per cent.
650,000 equal 5 per cent.
780,000 equal 6 per cent.
910,000 equal 7 per cent.
1,040,000 equal 8 per cent.
1,170,000 equal 9 per cent.
1,300,000 equal 10 per cent.

For convenience of reference the percentages having deaf children for each of the classes of deaf persons mentioned in Table LVIII are given below, where they may be directly compared:

CLASS OF DEAF RELATIVES.	Total	SEX.		DEGREE OF DEAFNESS		PERIOD OF LIFE WHEN DEAFNESS OCCURRED.		EARLY CHILDHOOD (Under 5).		
		Male.	Female.	Totally.	Partially.	Childhood.	Adult life.	Total.	Birth.	After birth, under 5.
Stated.....	1.4	1.4	1.4	2.4	1.1	1.9	1.0	2.9	5.0	1.9
d.....	3.2	3.2	3.2	3.3	2.6	3 4	2.1	3.8	6.4	2.4
—.....	1.1	1.1	1.0	1.4	1.0	1.1	1.0	1.5	2.5	1.0
a d.....	6 3	6.8	5.8	6.7	4.3	6.5	3.7	6.7	7.8	4.6
—*d*.....	2.2	2.0	2.4	2.2	2.0	2.3	1.6	2.7	4.9	2.1
a —.....	1.4	1.5	1.3	2.3	1.3	1.8	1.2	1.9	2.6	1.1
— —.....	0.9	0.9	0.8	1.0	0.9	0.8	0.9	1.3	2.3	1.0
a b d.....	9.5	12.7	6.0	9.9	(1)	9.1	(1)	9 3	9.0	(1)
a — *d*.....	5.5	5.3	5.7	5.9	3.6	5.9	(1)	6.1	7.4	3.3
— *b d*.....	2.5	1.6	3.5	2 4	(1)	2.7	.....	2 9	(1)	3.3
— —*d*	2.2	2.0	2.4	2 2	2.0	2.3	1.7	2.7	5.2	2.0
a b —....	1.9	1.9	1.9	3 1	1.7	3.0	1.3	0 9	(1)	....
a — —....	1.3	1.4	1.1	2.1	1.2	1.5	1.2	2.2	2.8	1.4
— *b* —....	1.0	1.1	1.0	1.6	1.0	0.8	1.2	.....	.....	....
— — —....	0.9	0.9	0.8	1.0	0.9	0.8	0.9	1.4	2.6	1.0

[1] Percentage not given when base is less than 100.

The above investigation relating to the marriages of the deaf and the effect upon the offspring affords a convincing demonstration of the fact that the laws of heredity which are known to apply to animals also apply to man. This has generally been assumed, but the above investigation demonstrates the proposition.

TABLE LIX.—*The Deaf, Classified by Period of Life When Deafness Occurred, Degree of Deafness, Ability to Speak, Sex, Race, Nativity, School Attendance, and Present Age.*

PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, ABILITY TO SPEAK, SEX, RACE, NATIVITY, AND SCHOOL ATTENDANCE.	Total.	PRESENT AGE.		
		Under 20.	20 and over.	Unknown.
Total	89,287	18,358	70,602	327
Period of life when deafness occurred:				
Childhood (under 20)	50,296	18,358	31,763	175
Adult life (20 and over)	35,924	.....	35,825	99
Unknown	3,067	.....	3,014	53
Degree of deafness:				
Totally deaf	37,426	13,987	23,272	167
Partially deaf	51,861	4,371	47,330	160
Ability to speak:				
Well	55,501	3,965	51,374	162
Imperfectly	9,417	4,566	4,809	42
Not at all	24,369	9,827	14,419	123
Sex:				
Male	46,915	9,998	36,741	176
Female	42,372	8,360	33,861	151
Race:				
White	84,361	16,702	67,397	262
Colored	4,926	1,656	3,205	65
Nativity of whites:				
Native	69,865	15,507	54,183	175
Foreign born	13,786	835	12,910	41
Unknown	710	360	304	46
School attendance:				
Attended school	65,717	14,290	51,228	199
Did not attend school	13,557	3,716	9,768	73
Not stated	10,013	352	9,606	55
Attended school:				
Kind of school—				
Special	25,197	11,349	13,753	95
Other	19,664	2,581	17,029	54
Both	237	57	178	2
Not stated	20,619	303	20,268	48

TABLE LX.—*The Deaf, by Age When Deafness Occurred and Present Age.*

AGE WHEN DEAFNESS OCCURRED.	Total.	PRESENT AGE.											
		Under 20.	20 and over.	Unknown.	Under 5.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 40.	40 and under 60.	60 and under 80.	80 and under 100.	100 and over.
All ages.....	89,287	18,358	70,602	327	1,021	4,551	6,710	6,076	19,457	22,172	22,146	6,751	76
Age when deafness occurred :													
Unknown.....	3,067	.....	3,014	53	.....	.....	.....	.....	617	886	1,164	344	3
Indefinitely stated...	4,630	1,049	3,554	27	57	241	421	330	467	748	1,434	890	15
Definitely stated	81,590	17,309	64,034	247	964	4,310	6,289	5,746	18,373	20,538	19,548	5,517	58
Birth.....	14,474	7,232	7,173	69	479	1,885	2,652	2,216	3,987	2,275	835	76	.....
After birth, under 2	7,396	4,039	3,344	13	276	1,175	1,418	1,170	2,339	791	206	8	.....
2 and under 5.....	10,536	3,882	6,627	27	209	958	1,450	1,265	4,056	1,854	662	55	.....
Under 5	32,406	15,153	17,144	109	964	4,018	5,520	4,651	10,382	4,920	1,703	139	.....
5 and under 10....	7,018	1,567	5,428	23	.....	292	618	657	2,582	1,882	888	76	.....
10 and under 15...	4,464	485	3,969	10	.....	.....	151	334	1,562	1,523	788	96	.....
15 and under 20...	4,061	104	3,939	18	.....	.....	.....	104	1,335	1,794	714	96	.....
Under 20	47,949	17,309	30,480	160	964	4,310	6,289	5,746	15,861	10,119	4,093	407	.....
20 and under 40...	16,588	.....	16,548	40	.....	.....	.....	.....	2,512	7,834	5,800	402	.....
40 and under 60...	9,437	.....	9,411	26	.....	.....	.....	.....	.....	2,585	5,782	1,040	4
60 and under 80...	6,595	.....	6,578	17	.....	.....	.....	.....	.....	.....	3,873	2,693	12
80 and over.....	1,021	.....	1,017	4	.....	.....	.....	.....	.....	.....	.....	975	42

Present age.—The present age of the deaf is given in Table LIX, by various classifications.

About one-fifth of the deaf are under 20 years of age; of these, over 75 per cent are totally deaf, while among the number over 20, only about 33 per cent, are totally deaf.

The per cent who speak is very much larger among those over 20, although the per cent who have attended school is larger for those under 20.

The figures presenting the relation of the present age of the deaf to the age when deafness occurred are found in Table LX.

Of the number now under 20, the largest per cent are the deaf from birth. Of those over 20, the largest per cent lost their hearing between the ages of 20 and 40.

The present age of the totally deaf from early childhood is compared with the present age of the entire population in Table LXI.

TABLE LXI.—*The Total Population at Specified Ages Compared with the Deaf from Early Childhood.*

PRESENT AGE.	Population of the United States.	THE TOTALLY DEAF FROM EARLY CHILDHOOD (UNDER 5).		
		Total.	Birth.	After birth.
Stated ages	100.0	100.0	100.0	100.0
Under 5	12.1	3.2	3.6	2.9
5 and under 10	11.7	12.5	13.3	11.6
10 and under 15	10.7	16.9	18.2	15.7
15 and under 20	10.0	14.5	15.4	13.7
20 and under 25	9.7	9.3	9.0	9.6
25 and under 30	8.6	9.3	7.1	11.4
30 and under 35	7.3	7.5	6.0	9.0
35 and under 40	6.5	7.1	5.6	8.6
40 and under 45	5.6	5.0	5.2	4.8
45 and under 50	4.6	3.9	4.1	3.7
50 and under 55	3.9	3.4	3.9	3.0
55 and under 60	2.9	2.6	2.7	2.4
60 and under 65	2.4	1.9	2.2	1.5
65 and under 70	1.7	1.3	1.6	0.9
70 and under 75	1.2	0.8	1.1	0.6
75 and under 80	0.7	0.5	0.6	0.4
80 and under 85	0.3	0.2	0.3	0.1
85 and under 90	0.1	0.1	0.1	0.1
90 and under 95	(1)	(1)	(1)	(1)
95 and under 100	(1)	(1)	(1)	.....
100 and over	(1)	.....	.....	.....

[1] Less than one-tenth of 1 per cent.

Table LXII[1] gives the geographic distribution of the deaf, by present age groups.

The North Central division shows the largest number deaf in each age group. The North Atlantic shows the next largest number.

Marital condition.—Table LXIII shows the marital condition of the deaf, classified by age and period of life when deafness occurred, degree of deafness, sex, and deaf relatives.

The marital condition of the deaf is clearly presented in Table LXIII. As might naturally be expected, the largest number of single persons is found among those who were deaf from childhood, while the proportion of married and widowed is especially large among those who became deaf in adult life. Naturally enough, also, the majority of those who remained single are totally deaf, more than two-thirds of those who are reported single being in the totally deaf class, while three-fourths of those who are married are only partially deaf. In the matter of sex males are in the majority in both the single and married class, but strangely enough there are almost twice as many widows as widowers. This may arise from the fact that the chance of remarriage is doubtless smaller for a deaf woman than for a deaf man, but the principal reason is probably to be found in the occurrence of deafness in old age among the many cases where the wife survives the husband. Whatever the cause of this preponderance may be, it is one of the interesting facts developed by this table.

By contrasting similar figures relating to marriageable population for the deaf and the total population, the following interesting percentages appear:

	Single.	Married.	Widowed.	Divorced.	Unknown.
Total population.....	36.0	55.5	7.8	0.4	0.3
The deaf.....	34.8	44.4	19.9	0.5	0.4

The proportion single and married among the deaf is slightly smaller than among the total population, while the proportion widowed is very much larger. Eliminating the deaf under 15 years of age considerably decreases the proportion single and increases the proportion married.

The relation of deafness to marital condition is shown in detail in Table 37.[1]

[1] Omitted from this republication.

TABLE LXIII.—*Number and Per Cent Deaf, Classified By Marital Condition, Age When Deafness Occurred, Degree of Deafness, Sex, and Deaf Relatives.*

AGE OR PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, AND DEAF RELATIVES.	Total.	MARITAL CONDITION. Number.					Per cent.				
		Single.	Married.	Widowed.	Divorced.	Unknown.	Single.	Married.	Widowed.	Divorced.	Unknown.
Total	89,287	39,070	34,206	15,331	353	327	43.7	38.3	17.2	0.4	0.4
Period of life when deafness occurred:											
Childhood (under 20)	50,296	34,248	12,924	2,791	147	186	68.1	25.7	5.5	0.3	0.4
Adult life (20 and over)	35,924	3,839	20,030	11,780	189	86	10.7	55.8	32.8	0.5	0.2
Unknown	3,067	983	1,252	760	17	55	32.1	40.8	24.8	0.5	1.8
Degree of deafness:											
Totally deaf	37,426	26,593	8,331	2,195	104	203	71.1	22.3	5.7	0.3	0.6
Partially deaf	51,861	12,477	25,875	13,136	249	124	24.1	49.9	25.3	0.5	0.2
Sex:											
Male	46,915	21,338	19,746	5,480	172	179	45.5	42.1	11.7	0.3	0.4
Female	42,372	17,732	14,460	9,851	181	148	41.8	34.1	23.3	0.4	0.4
Deaf relatives:											
a or *b* relatives	25,851	.....	10,888	.....	.....	.....	.....	42.1	.....	.....	.....
No *a* or *b* relatives	54,630	.....	20,446	.....	.....	.....	.....	37.4	.....	.....	.....
Not stated	8,806	.....	2,872	.....	.....	.....	.....	32.6	.....	.....	.....
Age when deafness occurred:											
Unknown	3,067	983	1,252	760	17	55	32.1	40.8	24.8	0.5	1.8
Indefinitely stated	4,630	1,840	1,407	1,346	14	23	39.7	30.4	29.1	0.3	0.5
Definitely stated	81,590	36,247	31,547	13,225	322	249	44.4	38.7	16.2	0.4	0.3
Birth	14,474	12,106	1,883	401	18	66	83.6	13.0	2.8	0.1	0.5
After birth, under 2	7,396	6,149	1,086	125	14	22	83.1	14.7	1.7	0.2	0.3
2 and under 5	10,536	7,466	2,634	368	26	42	70.9	25.0	3.5	0.2	0.4
Under 5	32,406	25,721	5,603	894	58	130	79.4	17.3	2.7	0.2	0.4
5 and under 10	7,018	3,953	2,447	561	33	24	56.3	34.9	8.0	0.5	0.3
10 and under 15	4,464	1,870	2,031	521	33	9	41.9	45.5	11.7	0.7	0.2
15 and under 20	4,061	1,171	2,291	571	18	10	28.8	56.4	14.1	0.4	0.3
Under 20	47,949	32,715	12,372	2,547	142	173	68.2	25.8	5.3	0.3	0.4
20 and under 40	16,588	2,244	10,903	3,286	119	36	13.5	65.8	19.8	0.7	0.2
40 and under 60	9,437	810	5,327	3,232	44	24	8.6	56.4	34.2	0.5	0.3
60 and under 80	6,595	421	2,710	3,435	16	13	6.4	41.1	52.1	0.2	0.2
80 and over	1,021	57	235	725	1	3	5.6	23.0	71.0	0.1	0.3

TABLE LXIV.—*Number and Per Cent Deaf, Classified by School Attendance, Degree of Deafness, Sex, Race, and Age When Deafness Occurred.*

AGE OR PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, RACE, AND PRESENT AGE.	Total.	SCHOOL ATTENDANCE. Number. Attended school.	Did not attend school.	Not stated.	Per cent. Attended school.	Did not attend school.	Not stated.
Total	89,287	65,717	13,557	10,013	73.6	15.2	11.2
Period of life when deafness occurred:							
Childhood (under 20)	50,296	40,448	7,974	1,874	80.4	15.9	3.7
Adult life (20 and over)	35,924	23,700	5,109	7,115	66 0	14.2	19.8
Unknown	3,067	1,569	474	1,024	51.1	15.5	33.4
Degree of deafness:							
Totally deaf	37,426	29,348	6,480	1,598	78.4	17.3	4.3
Partially deaf	51,861	36,369	7,077	8,415	70.1	13.7	16.2
Sex:							
Male	46,915	35,476	6,987	4,452	75.6	14.9	9.5
Female	42,372	30,241	6,570	5,561	71.4	15.5	13.1
Race:							
White	84.361	63,680	11,027	9,654	75.5	13 0	11.5
Colored	4,926	2,037	2,530	359	41.3	51.4	7.3
Age when deafness occurred:							
Unknown	3,067	1,569	474	1,024	51.2	15.4	33.4
Indefinitely stated	4,630	2,831	726	1,073	61.1	15.7	23 2
Definitely stated	81,590	61,317	12,357	7,916	75.2	15.1	9.7
Birth	14,474	10,541	3,436	497	72.8	23.8	3.4
After birth, under 2	7,396	6,076	1,218	102	82.1	16 5	1.4
2 and under 5	10,536	8,983	1,308	245	85.3	12.4	2.3
Under 5	32,406	25,600	5,962	844	79.0	18.4	2.6
5 and under 10	7,018	5,858	843	317	83.5	12.0	4.5
10 and under 15	4,464	3,758	438	268	84.2	9.8	6.0
15 and under 20	4,061	3,401	385	275	83.7	9.5	6.8
Under 20	47,949	38,617	7,628	1,704	80 5	15.9	3.6
20 and under 40	16 588	12,929	1,725	1,934	77.9	10.4	11.7
40 and under 60	9,437	6,199	1,476	1,762	65.7	15.6	18.7
60 and under 80	6 595	3,248	1,270	2,077	49.2	19.3	31.5
80 and over	1,021	324	258	439	31.7	25 3	43.0
Present age:							
Under 20	18,358	14,290	3,716	352	77.8	20.3	1.9
20 and over	70,602	51,228	9,768	9,606	72.6	13.8	13.6
Not stated	327	199	73	55	60.9	22.3	16 8

TABLE LXV.—*Number and Per Cent of Deaf Attending School, Classified by Age when Deafness Occurred, Degree of Deafness, Sex, Race, Present Age, and Kind of School.*

AGE OR PERIOD OF LIFE WHEN DEAFNESS OCCURRED, DEGREE OF DEAFNESS, SEX, RACE, AND PRESENT AGE.	Total.	NUMBER ATTENDING SCHOOL.				PER CENT ATTENDING SCHOOL.			
		Special.	Other.	Both	Not stated.	Special.	Other.	Both.	Not stated.
Total	65,717	25,197	19,664	237	20,619	38.3	29.9	0.4	31.4
Period of life when deafness occurred :									
Childhood (under 20)	40,448	24,846	10,826	225	4,551	61.4	26.7	0.6	11.3
Adult life (20 and over)	23,700	125	8,336	10	15,229	0.5	35.2	(1)	64.3
Unknown	1,569	226	502	2	839	14.4	32.0	0.1	53.5
Degree of deafness :									
Totally deaf	29,348	22,734	3,827	181	2,606	77.5	13.0	0.6	8.9
Partially deaf	36,369	2,463	15,837	56	18,013	6.8	43.5	0.2	49.5
Sex :									
Male	35,476	13,851	10,441	132	11,052	39.0	29.4	0.4	31.2
Female	30,241	11,346	9,223	105	9,567	37.5	30.5	0.4	31.6
Race :									
White	63,680	24,308	18,974	236	20,162	38.2	29.8	0.4	31.6
Colored	2,037	889	690	1	457	43.6	33.9	0.1	22.4
Age when deafness occurred :									
Unknown	1,569	226	502	2	839	14.4	32.0	0.1	53.5
Indefinitely stated	2,831	893	1,057	6	875	31.6	37.3	0.2	30.9
Definitely stated	61,317	24,078	18,105	229	18,905	39.3	29.5	0 4	30.8
Birth	10,541	9,232	953	29	327	87.6	9.0	0.3	3.1
After birth, under 2	6,076	5,110	799	28	139	84.1	13.1	0.5	2.3
2 and under 5	8,983	6,521	1,908	47	507	72.6	21.2	0.5	5.7
Under 5	25,600	20,863	3,660	104	973	81.5	14.3	0.4	3.8
5 and under 10	5,858	2,511	2,448	60	839	42.9	41.8	1.0	14.3
10 and under 15	3,758	488	2,192	40	1,038	13.0	58.3	1.1	27.6
15 and under 20	3,401	96	1,895	15	1,395	2.8	55.7	0.5	41.0
Under 20	38,617	23,958	10,195	219	4,245	62.0	26.4	0.6	11 0
20 and under 40	12,929	78	4,838	10	8,003	0.6	37.4	0.1	61.9
40 and under 60	6,199	30	1,888	.....	4,281	0.5	30.4	.....	69.1
60 and under 80	3,248	12	1,040	.....	2,196	0.4	32.0	.....	67.6
80 and over	324	.....	144	.....	180	.....	44.4	.....	55.6
Present age :									
Under 20	14,290	11,349	2,581	57	303	79.4	18.1	0.4	2.1
20 and over	51,228	13,753	17,029	178	20,268	26.8	33.2	0.4	39.6
Not stated	199	95	54	2	48	47.8	27.1	1.0	24.1

[1] Less than one-tenth of 1 per cent.

School attendance.—Table LXIV distributes the deaf by age or period of life when deafness occurred, degree of deafness, sex, and race in relation to school attendance. Unfortunately for purposes of comparison in the total population the deaf are not classified according to literacy and illiteracy. Attendance at school is in reality a most unsatisfactory test, since many persons who have not attended school may be literate, and among the deaf it is likely that a large proportion would come within this class. However, even if it be assumed that only those of the deaf who have attended school are literate as a class, the deaf show comparatively little illiteracy. In 79,274 cases the question as to attendance at school was answered, 65,717, or 73.6 per cent, attending, and 13,557, or 15.2 per cent, not attending; while in 10,013 cases no answer was received. There are practical reasons, indeed, why illiteracy among deaf persons should be less than among the general population, since writing necessarily forms for many the principal medium of communication. Persons who are totally deaf usually employ the sign-language or communicate by writing, the acquisition of one being about as easy as the other. In the case of the deaf, therefore, there is a definite and personal reason which operates against illiteracy. The white race shows a much larger per cent attending school than the colored.

Those whose present age is under 20 show 77.8 per cent who have attended school, as against 72.6 per cent of those 20 years of age and over.

Table LXV shows the deaf who have attended school, by kind of school, age or period of life when deafness occurred, degree of deafness, sex, race, and present age.

In 20,619 cases the kind of school attended was not stated. Of those who did state kind of school, the larger part had attended special schools. This was to be expected, in view of the fact that the great majority of those who reported schooling (40,448 out of 65,717) became deaf in childhood.

Of the totally deaf, 77.5 per cent, and of the partially deaf only 6.8 per cent, attended special schools.

A slightly greater proportion of the males than of the females attended special schools, 39 and 37.5 per cent, respectively, the latter exceeding in the proportion who have attended other schools.

Of those who lost hearing before 5 years of age, 81.5 per cent attended special schools, this proportion decreasing rapidly as age when deafness occurred increases. The percentage who did not state kind of school attended increases as the age when deafness occurred increases.

(*To be continued.*)

IS THE SIGN-LANGUAGE A NECESSITY CALLED FORTH BY NATURE AND CIRCUMSTANCES?[1]

By Eugene Sutermeister, Berne, Switzerland.

My dear fellow-sufferers! I believe I am justified in assuming that the mental élite of the German deaf is gathered here. What I have to say is intended exclusively for intelligent persons. I state this explicitly, so as to prevent misunderstandings at the very outset.

My subject is the following: Is the sign-language a necessity? I can well imagine what reply will be made to this question. But before I give my own reply to this much-discussed question, I would make some explanatory remarks regarding spoken language and the sign-language. It is true that I am only a layman in these matters, but a layman taught by my own experiences and observations. Above everything it is my aim to combat an opinion exceedingly common among the deaf, a fatal error which has given rise to other errors, namely, that the sign-language is the "mother tongue" of the deaf.

It is true that the desire and capacity for speech are innate in man; but speech itself is a creation of the human mind. What nature has done here is simply this, that she has supplied man, as well as many animals, with organs through which he can produce different sounds. But it is human reason which has brought order into this mass of originally inarticulate sounds and formed them into a systematic language. It should be observed, however, that man placed by himself, even with all his reason, could never, by himself and for himself, form a language. This could only be done by coming in touch with other men and by mutual assistance, and was aided by the desire to communicate with others, a desire which is much stronger in man than in animals. A person possessed of all his senses, excluded from his birth from the company of any other living beings, would remain just as mute as a person born deaf would be (without instruction) among other men: the first mentioned has not the slightest cause to use speech; and the second only lacks the opening-way towards speech. Both, how-

[1] An address made at the Fourth German Deaf-mute Congress at Stuttgart, May 22, 1899. Translated from "Organ der Taubstummen-Anstalten in Deutschland."

ever, have a desire for speech; only in the first case it does not at all become active and in the second case it is insufficiently active. Thus, the intercourse between soul and soul, the mutual touch of minds, must be called the real cause of human speech, for they have called forth the desire for a more distinct expression of all wishes, intentions and thoughts, and have used and developed for this purpose the nearest, the most natural, and the most perfect means, the voice.

But what is it which alone makes the correct development and perfect use of this means of expression possible? The sense of hearing. Where there is deafness from the beginning, there is no spoken language; but not because the deaf person is not adapted for it, but solely because there is nothing to awaken, regulate, and guide the voice which only lies fallow in the throat of the deaf. The assertion that the deaf is not born for spoken language would be correct only if the organs of speech of the deaf would from birth show some defect—as, for instance, the eye in the case of persons born blind. It is well known that cases where the organs of speech show some defect from birth in deaf persons are exceedingly rare. Frequently, a purely external consequence of an innate defect not at all caused by the innermost nature of the organ in question, a mere accessory phenomenon, is erroneously termed an innate special defect. And then: how can persons not deaf from birth all of a sudden be considered "as not adapted for speech?" Persons who have been able to hear during the first months of their life and who have commenced to speak, or at any rate to utter sounds, but who have since become deaf, and therefore completely mute, so that they had—like so many of us—to acquire speech artificially; how can such be considered as "not adapted for speech"? There are even cases where children of the last mentioned category do not make such progress in speech as children who are born deaf. This, therefore, is the status of the famous theory—only too readily believed in—of our not being predestined for spoken language.

Because with us the main factor in the development of the voice, furnished by nature, namely the sense of hearing, is lacking, human ingenuity must step in; and it has found more than one assistant factor: the eye and the touch. Both combined do not render anything like the service that the ear renders; but let us show our gratitude for the possession of these aids by using them faithfully. Who would seriously dispute the fact that an arti-

ficially awakened and artificially developed speech is a far better substitute than even the most perfect sign-language? Though our pronunciation is not always understood immediately by any one, the signs will not be understood at all by the majority of persons, and, moreover, express but a very small proportion of the wealth of words contained in a language. In spite of the two natural aids referred to, our speech, of course, does not yet sound natural; but it would be a wrong conclusion to term it unnatural for that reason. Simply because we lack the control of the voice, which, moreover, has been developed in an unusual manner, the voice with us becomes different from that of other people. That we by nature are capable of speaking is amply proved by our entire unimpaired organ of speech. If we did not possess this organ, or if it were destroyed, we would be utterly incapable of producing even a single sound, and no art, no power in the world would be able to make us even babble only.

In short, we deaf will and must consider the ability to speak as a sacred privilege from mother nature. This privilege alone, in addition to the erect walk, distinguishes us from the animals; a defect of nature has simply weakened this privilege, but has not deprived us of it entirely as it has deprived us of hearing. Human ingenuity and our own will power are to regain speech for us, even if not to the full extent of the speech possessed by a hearing person. For this reason we should show the deepest gratitude to those who aid us in our endeavors, with almost superhuman patience, instead of opposing them through narrow-minded zeal and irrational fanaticism. And why is the pure-speech method of instruction opposed?

1. Because it gives the pupils some trouble in the beginning, and because the greater convenience of the signs make these to most of the pupils a more favored means of communication.

2. Because the pupils shun the constant self-control which at all times watches over the voice which has been gained by an effort; and which clings to this voice as the only means of communication; and because many pupils do not possess the energy necessary for this self-control.

3. Because they are not satisfied with the results obtained, in which opinion they are unfortunately confirmed by persons possessed of all their senses, and even by some teachers, in their foolish haste for results, and through ill-advised kindness.

But I ask, when in all the world have the teachers who employ

the speech method of instruction promised us a perfectly natural speech? Never! They are perfectly conscious that their activity has its well-defined and impassable limits. Let us only take care that each one retains in life what he has gained at school, be it ever so little. Our speech can be maintained only by constant application; let us remember this! Hearing persons might of their own free will be mute for years, and then still be able to speak as well as before. Any one of our number who, after having left school, speaks worse than before, will in most cases have to trace this to his own negligence, to his taking things too easy. We have only too many instances of this. But nothing is so apt to undermine the speech, to diminish the ability to speak, or even deprive a person of it altogether, as the use of signs.

Here I come to speak of signs themselves. What are these but a poor makeshift, forced upon us by embarrassment; a makeshift for expressing the thoughts of the deaf striving for expression, a bridge not safe and often much too narrow to communication with others? Oh, I well remember the years of my complete muteness! In those days my mimics, which had developed or rather had been received by degrees, had in no sense of the word "burst forth from my soul with the force of nature," as even a teacher endowed with all his senses maintained. This same teacher made other untenable assertions, just as if he had personally passed through all the phases in the mental development of a deaf-mute. To state the truth: I only learned the making of signs from my surroundings whose more developed minds led them to adopt this makeshift. Enticed by their example, I now endeavored to form signs which, however, in the beginning related almost exclusively to one single subject, one single activity, one single attribute. How primitive, and how almost "meaningless" they were became immediately apparent when I compared myself with those of my fellow pupils with whom I came in closer contact. Here likewise the actual "sign-language," which, as is well known, for the greater part consists of "artificial" signs, only developed on mutual intercourse; here, likewise, this sign-language was only a product of the ingenious human mind, which might be produced not only by deaf-mutes but also by hearing persons. Let us observe here that the sign-language is in itself something artificial and not the "natural privilege" of the deaf. Even the so-called "natural" signs of an uneducated deaf-mute, if closely examined, are found to be outward characteristics forced

of themselves or by others upon the eye and the hands, mere accidentals which have used the nearest and external characteristics for the formation of signs, often in the most arbitrary manner, so that in another place another sign is used for one and the same thing. Whenever such an uneducated deaf-mute attempted to refer to some mental attribute, something farther removed from the common everyday matters, nature left him completely in the lurch. When, for instance, I saw my mother pack my trunk for the journey to the distant institution for the deaf, my mind was full of questions. I wanted to know where I was going, for what purpose, and for what length of time? But instead of words—for I was mute—instead of signs—for here there were none to express the unformed thoughts and indefinite ideas filling my mind, and the feelings agitating my heart—instead of these, a nameless grief at my utter inability to express myself filled my soul. Sufficient proof that signs are to a very small degree only founded on nature.

Supposing that two actual deaf-mutes were allowed to grow up together, without any instruction whatever, and separated from all human society, I am convinced they would never invent a complete sign-language—the so-called "natural" signs would always be reduced to a minimum, and would be nothing but awkward expressions of instincts, needs, and emotions, such as are also felt by animals and are also expressed by them, for intance by dogs by looks, wagging of the tail, and the entire position of the body. To invent a language, even a sign-language, more than two persons are required, and a longer time than that of a generation.

All I have said is merely intended to trace the real origin of signs. In my own person I have observed their development. I actually breathed more freely, my mind felt as if it had been liberated from a prison, when a much simpler means of expression was placed in my hand, to speak more correctly, in my mouth; a means which reaches its object quicker and in a more certain manner, and reaches everything, even the highest mental attributes. How can any one give the preference to a language inwardly and outwardly so poor, and intelligible only to a small portion of our surroundings before one infinitely richer and infinitely more worthy of a human being?

I have been accused of not knowing anything about the sign-language, for, otherwise, I would not speak of it in such a depre-

cating manner. To persons making this assertion I would simply say that for a number of years I have used the sign-language; for in the beginning of my schooling the sign-language still flourished. Even now I understand it when used by others, although for my own person I have discarded it long since. I have in different places repeatedly visited various associations of the deaf, and for several years was a member of such an association, where signs were used exclusively because the majority of the members had been educated under the old system. The suggestion made in the "Deaf-mute Courier" that I should frequent some of the more intelligent circles of the deaf, and witness their conversation by signs, is, therefore, entirely superfluous. The very sight of such a conversation has invariably stirred my innermost heart, and spurred me on anew to work without ceasing for an improvement in this direction.

I ask once more: Why rather signs than speech exclusively? Some immediately say: "The voice, the miserable voice!" My goodness! Do hearing persons understand signs better than speech, and do the signs aid them in understanding our spoken words? No! the spoken words may even become more confused thereby. Invariably have people possessed of all their senses been able to understand even a rather indistinct speech relatively better than the sign-language which to most of them is a sealed book. Possibly they have first to become a little accustomed to the manner of speaking of one or the other, but that goes always quicker than to become acquainted with all the complicated signs. And if, on the other hand, I am told by deaf-mutes: "We use the signs only among ourselves," I must ask whether any one of our number will seriously maintain that the poor voice is a hindrance to our mutual understanding? To our closed ears it is utterly immaterial whether any one speaks to us in a certain tone of voice. And are we after all the only ones who have to be taken into account? Are we only made for intercourse with our fellow sufferers? One would think so, for only if that were the case, has the nervous and determined defence of the sign-language any reason to support it. I do not hesitate to say that only a spirit of caste can cling to it. Then another person says: "We cannot read everything from the lips; and when lip-reading fails, the sign-language must come to our aid. This, because known only to us, can only apply to persons who are in the same predicament as ourselves." Here I must express my astonishment that these

fellow-sufferers cannot read from each others' lips, for we all know from our school days, and much better than hearing persons, how we have to talk to each other, in order to be understood. Let us act accordingly! To be candid, most deaf use signs when they very well could understand each other if they used speech, therefore signs are used only from habit, and—let us acknowledge it—from sheer laziness. They would like to understand immediately and without an effort, so to speak, catch in advance every word with hand and eye, instead of quietly by lip reading taking in what is said to them. This we have to do any way if we converse with hearing persons. Let us at last cease to consider ourselves as a peculiar class of human beings, and let us cease to use among ourselves a peculiar means of communication for which, moreover, there is no real necessity. Look at the sensible deaf without mimics! How much more natural, nobler, and calmer, more in accordance with human dignity, and how much more pleasing to the looker-on is their conversation than the unnaturally lively, often excited, mimic conversations which only, too often, try the eye and heart of normally endowed persons, or even invite mockery. The only disturbing element in the conversation of the first-mentioned class of deaf is the disagreeable sound of the voice. But this slight discord, slight in view of the great object gained, is far to be preferred to the excited and odd actions of those using mimics.

What else can then be said in favor of mimics? Some say: "Mimics must support the spoken word, must take the place of the enlivening, strengthening, and deepening sound!" Yes, it is sad that we have lost a means of understanding which powerfully stirs heart and soul. This, however, can only be remedied to some extent by a suitable education of the mind, never by mimics. He who has been thus educated will never need mimics; and a dull person is not stirred in the least even by the most violent mimics. Signs or mimics can never influence the inner man, for this they are too coarse, too obtruding to the eye, not as impressive as the sound which can be so real and, at the same time, intangible. The most mimics can do is to confirm and make plain. But is it absolutely necessary that the impression of each word should be duplicated by outward means, and that its meaning should be demonstrated by signs, a meaning which is contained in the very spoken word itself, and which the active thinking mind without any outward assistance grasps in an instant? It would, therefore,

only be an indication of mental poverty if any one, nevertheless, would need some outward means in order to fully understand the spoken words. If mimics are absolutely necessary for making things plain, what will we do in reading? for here the dead letter, just like the loud word, remains dead for us, and no one and no aid can make it plain. But as well and as truly as a written word can go right to our heart (if only we fully grasp it with our mind), just as well can a spoken word do this even without signs. It is the spirit which enlivens and is not bound to any outward aids. Why, therefore, use mimics when we are able to inwardly digest every idea without any trouble? Why use a double when the spoken word in itself by means of the reading eye and the grasping mind, can enter our heart? In short, he who can speak, read from the lips, and understand does not need the hands, and if he uses them nevertheless, he alone must be blamed for it and no one else.

But few deaf are in the habit of pondering over this matter, of going to the bottom of a thing, or of critically observing themselves and others. Because the sign-language comes so easy to them they think immediately that this is innate. Even persons endowed with all their senses are deceived thereby. Great skill in any branch does not always indicate that this is original. A habit of years is by no means a natural gift. Both may be something utterly contrary to nature, but which by constant practice has become a "second nature." This applies in most deaf to mimics. Persons who give this matter more serious thought see the disadvantages of mimics at a glance. I will enumerate a few of them.

Probably most of us must, when engaged in our daily labors, remain mute, whilst persons endowed with all their senses can very well talk with each other without interrupting their work. And then in the evening the deaf go to their "club" and engage in endless talk, not with the mouth, though, or using it only occasionally, and generally only by moving the lips without uttering a sound. But to make up for this, they let their fingers play incessantly. Now, let any one ask himself: How can a man under these circumstances retain his more or less good pronunciation acquired at school? How can he make full use of the stock of words accumulated at school? How can he cultivate lip-reading when he deprives himself of the numerous opportunities for practicing it, by relying too much on mimics? It will be easily

understood that his speech must deteriorate, for he does not keep it in good condition by constant practice; it will be easily understood that signs are much more intelligible for him than spoken words, for he has gradually lost the art of lip-reading. But a deaf person without mimics causes others to speak to him, and thus he obtains, if not absolute excellence, still very considerable skill in lip-reading. And because he himself uses speech exclusively, his voice loses nothing in strength and distinctness. Do as I do! To keep up my speech I frequently in the evening read aloud to my hearing wife. If we want to be honest we must grant that we can very well feel whether we speak imperfectly, or whether we speak with perfect articulation. This feeling we have acquired during instruction at school, and it has there been developed to a certain degree of assurance by our having been constantly reminded by the teacher whenever we pronounced a word indistinctly or incorrectly. It would be an advantage in every respect if reading-evenings, under the guidance of hearing persons, were introduced in the "clubs" (in addition to the usual theatricals or dances). As every one would have to take his turn at reading aloud, it would keep each member in constant practice as regards lip-reading and speaking, and would supply the mind with richer and better food. I would, therefore, say especially to the younger generation which comes from schools where they were instructed by the pure-speech method: "Hold fast what thou hast, and let no one take away thy crown from thee!" Is not the ability to speak the crown of the education of the deaf, and in fact of all human mental development? If whilst at school we could so well communicate with each other without mimics, why should this all of a sudden be impossible when we enter practical life? If we can express our thoughts by audible words, why fight the air with our hands and make faces?

To some extent this tendency for mimics is caused by the preference for the visible and tangible which is, to a greater extent than in hearing persons, a characteristic of deaf persons, because they, so to speak, live by sight alone. But, since to us likewise by word and writing, a world of higher ideas and aims is opened, it is more dignified, more satisfactory to our soul and mind, to bravely conquer the consequences of a defect than to give way to it in a cowardly manner.

I deplore the false compassion which has misled some people to encourage the use of mimics by the deaf. I deplore it that

many a person who undeniably has a warm heart for the deaf, seems unable to see that he would render us an immeasurably greater service by bringing us closer to the rest of the world than by shutting us up in a caste. To endow the deaf with speech and determine him to use it exclusively is not an unattainable object; we have undeniable daily instances of this.

Of late years the magic word "America," the halo which surrounds delegates from America, has had a powerful influence on many deaf, and at any rate confirmed their idea that they are right. I do not doubt in the least that the supporters of the "combined method" seriously have our welfare at heart, and for this I highly esteem and honor them. The only fault to be found with them is this, that they start from wrong premises, and that they obstinately refuse to recognize facts, and even endeavor to detract from them. In doing this they easily become personal and bitter, which does not tend to aid their cause. They will in no way admit that their theory, which has only superficially been confirmed by practice, cannot meet the demands of a more natural and higher human education. To give only one instance: How has Dr. Gallaudet acted as regards the German pure-speech schools? Has he deemed them worthy of a closer and more extended inspection? Who could blame me that I want to advance my deaf brethren further than all of such? I presume that this is permitted? And that it is possible, I have experienced in myself and in hundreds of others. I have had instances that even the poorly-endowed deaf can exist without mimics, and that without them they do not by any manner of means only vegetate. Oh no! these are the very ones who can better express themselves by word and writing than impassioned "sign-makers." I possess proofs of this. There are no doubt among the deaf of the "combined system" able speakers and writers. But I am just as certain that these very ones could best dispense with mimics. That they don't do it is a double reproach to them. I have studied the difference between the two systems practically in myself and my fellow students. When the "combined system" was discarded in the three upper classes (we had four), and we had to use speech exclusively, speech and style improved rapidly; for when you devote yourself to one thing alone your success is apt to be more complete than when you divide your attention between two. It is always difficult to serve two masters!

For years I was a member of an association of the deaf in Lahr and Dinglingen, where mimics were excluded. The "Courier" has doubted the existence of this association, and accused its members of "keeping their own nature in the bonds of slavery" and of "being untruthful to themselves." These expressions, which were the product of gigantic ignorance (or could they possibly have been caused by the cowardly intention to kill facts by obstinately ignoring them?), greatly amused us. If the anonymous writer only could have seen how cheerfully, freely, and readily we conversed with each other by speech! We were full of gratitude to our teachers who had almost made us the equals of normally endowed persons. It was a great satisfaction to us that we had absolutely no need of the disagreeable mimics! Some did not know the sign-language even by name. They had just left a pure-speech school, and immediately became members of our association. They knew no other way of expressing themselves than by speech; and how well did they do this! Any one can, to this day, convince himself of this by attending a meeting of the association. If any one had attempted to persuade our members that mimics were an indispensable necessity they would have looked at him with utter astonishment, and—rejoicing in their happy freedom, in the ease with which, through constant practice, they could express their thoughts by speech—they would have given expression to their deep regret that their fellow-sufferers were to such a degree the slaves of mimics.

One other assertion remains to be refuted, which likewise forms one of the shaky pillars of the sign-language theory, namely that the deaf think "by mimics." What does "thinking" mean? Thinking presupposes certain definite ideas, and is nothing else than the gathering and combining of these ideas into concrete notions. But how are notions acquired? By a comparison of ideas of the same kind, and by eliminating everything non-essential. It is true that the spoken word—for instance, that of the teacher—may afford aid in this matter; but the process just indicated must be gone through by the pupil himself if a notion is to become perfectly clear to him. But how are the notions fixed in the mind and how do they find their outward expression? By the spoken word. And how is the spoken word (speech) acquired? By hearing, speaking, and writing. As hearing is excluded with the deaf, only speaking or writing can be employed by him. Even

the uneducated deaf can think, for he possesses ideas. But neither the educated nor the uneducated deaf has, with all his thinking, a word before his mental vision, nor a sign, but solely ideas just like a normally endowed person. For these ideas the words or signs come subsequently and, so to speak, mechanically. But can this be called thinking by words or mimics? If an incarnate "sign-maker," for instance, thinks of a wedding, his mental vision does not see any words or signs, but he sees in his mind the bride adorning herself, he sees her with the bridegroom and the guests drive to the church, etc., etc. Only when he wants to describe it to others, or only has the intention of doing this, the suitable words or signs come to him at the given moment. It should not be forgotten that especially for abstract ideas the signs had to be invented. Can this be called "thinking by signs or mimics"? A similar process takes place when the deaf reads a book or a newspaper. He does not picture to himself the various persons and events by the corresponding signs, but he pictures to his mind that he is living through the scenes about which he reads, that he is present at these various scenes. Only when he desires to communicate to others what he has read, signs come into play. And when in his mind he follows a train of thought of a higher, spiritual order, for instance, concerning death and eternity, he sees with his mind's eye no external images or signs, but he forms in his thoughts the ideas and the words and connects them. Only when he wants to tell his thoughts to others, the corresponding signs come to him. Can this be called "thinking by signs"? No, it must be called "expressing by signs what has been thought without signs." To express thoughts might just as well be done by writing, but then you could not call this "thinking by letters." To be consistent, we would on the other hand have to say to the deaf: "The hearing persons think by sounds," which is not correct either, for when hearing persons think of something, philosophise about something, they do not give the slightest thought as to what sounds they will use, but they have only their mental ideas. The only difference between the thinking of normally endowed persons and the thinking of persons deaf from birth is that the latter do not possess such a wealth of ideas as the former. This is quite natural, because every sound is banished from his mind and all that is connected therewith. Otherwise the two think in exactly the same way; they only utter their thoughts in a different way.

I refer you here to the excellent article by Obhlidhe reproduced in the March and April numbers of the "Courier," and which I did not read until after I had written the present address. I was agreeably surprised to find this treatise in a journal which generally speaks in a very bitter manner of "speech-fanatics." In its number for April last the "Courier" has used rather strong expressions concerning me, such as "pride," "not having the right spirit," "as regards the sign-language an inexperienced child," "does not take the slightest regard to the cruelties incidental to instruction by the speech-method," "to write and speak like a little child, that is to say, like a stupid person, seems to be the high ideal of Mr. Sutermeister and his followers, the speech-fanatics," and other similar expressions, and all concerning a man whom the writer of the article has never seen.

Here I stand! let people endeavor to harmonize all these reproaches with my words and works! I have only one reply to make. Honored hearers, tell me, is it not rather puerile to reject the pure-speech method simply because some teachers have made mistakes in applying it? That would be too radical a reasoning. Do similar cruelties occur *only* in this method of instruction? Are they inseparably connected with it? I say, no; the teacher who cannot master his anger on one occasion will not be able to master it even on other occasions. Where others in the same field can accomplish so much by gentleness and patience, he could do the same if he would only control himself. Patience and labor, even if they exceed the usual limits, do by no manner of means prove that the object on which they are bestowed is an unnatural one. They only prove the difficulties of the artificial road which we must take instead of the natural, in order to reach the aim which nature has likewise set for us. We might certainly look for some degree of knowledge of human nature, for some just appreciation of the circumstances, in the able writer of the article to which I have referred! In spite of our widely divergent opinions, in spite of his invectives, I would like to take this man by the hand, for I gladly acknowledge his truly untiring, though at times not well-directed, care and devotion to the welfare of his fellow-sufferers. But then a person should not immediately become bitter, should not presuppose bad motives, but should stick to the subject in hand! For instance: do the alleged cruelties related in the "Courier" weaken my defence of the pure-speech method; do terms like "proud," "ignorant," etc., refute my arguments?

But I must conclude. I know very well that I stand well nigh alone among my fellow sufferers with my views and experiences. The easy road, even if not the best, will always be followed by the larger crowd. But the experiences on which I base my arguments can be made by any one possessed of some energy and endurance. I also know that in this hour many a one of those present has thought in his heart: "Look at this man! he preaches against signs, and nevertheless has found it necessary to employ a sign-maker!" Yes, unfortunately! but I am willing to lay a wager that not one of the deaf hearers, or, I should say, spectators, would be able to make a faithful stenographic report of my address, in spite of my exceedingly able interpreter. This is simply another illustration of the weakness and insufficiency of signs.

I confess, I am opposed to large meetings of the deaf. It should be acknowledged that we are not well adapted for wide circles! Our activity, because hindered by deafness, can never extend very far, and the reading eye cannot reach as far as the hearing ear. Even signs can remedy these defects only to a small extent. And if, nevertheless, I have come to attend this meeting, I have done this simply because I consider it my sacred duty to use every opportunity and every legitimate means, as time and circumstances permit, to raise my voice for the best and highest that can be accomplished in the education of the deaf, and which has actually been accomplished.

One word yet, regarding associations of the deaf. I am not opposed to them, but they need a radical reform in spite of all high-sounding statutes. What do most associations do but further the destruction of that which the school has given its pupils as its best and most valuable gift for actual life, namely, speech? Is the knowledge of other subjects gained at school cultivated and further developed? What do most of these associations cultivate but mere sociability which is cemented by the common defect, deafness? Our associations should set themselves a higher aim than mere pleasure, namely, the development of all the faculties of body, soul, and spirit. They should serve higher purposes than to be a mere outward expression of union, namely, the purposes of mutual improvement and development in every respect. It would, for instance, be a very laudable undertaking for an association to, first, banish signs and make speech the only permitted means of communication; second, to introduce reading-evenings, such as I have had reference to; third, to have every now and then oral lectures by educated deaf or fully endowed persons on important and interesting subjects from life, nature, science, etc. This would give more character to our associations, and would awaken more sympathy and support on the part of hearing persons. I do not begrudge to any one merely entertainments, a sociable time, glad festivals, for I myself enjoy them; but over all this the mind should not be neglected, neither body nor soul

should suffer. Life is a serious matter. We, the deaf, are likewise called to something higher.

In conclusion, I would beg those present not to misunderstand me. It is by no manner of means my desire that signs should be entirely banished from the world. No, I repeat here what I once wrote in a journal: The sign-language can justly claim precedence in three directions: First, as the sole means of communication for infants; second, as a provisional means of communication and an aid in the lower grades of deaf-mute instruction; third, as a lifelong aid for weak-minded persons. But within these limits it should remain! The older ones among us, who have been educated in the old school, or those who have used the sign-language for a long time, should continue to use it. We understand their condition and love and esteem them none the less for it. In this respect the opponents of signs certainly show a greater degree of tolerance. We all remember the old adage: "What little Hans does not learn, big Hans will never learn"; habit has become too powerful. But the supporters of the sign-language should be careful not to attempt to lead astray young persons who have just left pure-speech schools, or to call them proud, as is frequently done. Those who attempt to destroy the result of the hard labor of years, from sheer ignorance and without any real necessity, should at least cease to revile the teachers who have done that hard work. All that has been done in this line for years I only look upon as the reaction which invariably follows great and radical reforms; I consider it as a foolish longing for the fleshpots of Egypt. But we, who have entered the promised land, who have found something better and higher, and—which is the most important point—maintain ourselves in its permanent possession, we feel it our duty to recommend it to our brethren of another opinion, even at the risk of being outroared. Even outsiders who have once seen and heard the deaf converse among themselves without signs, think it simply incomprehensible how others, and these talented persons, can oppose a reform which so advantageously changed their outer being, their whole manner of intercourse, and has almost raised them to the height of a normal person. But this should be stated: All the petitions to the Government authorities, all the protests of mass-meetings, all the invectives hurled at instruction by the speech method and at its supporters, all of whom are men of common sense and not fantastics, all this, I say, will be of no avail, for the good invariably gains the victory in the end.

This is all I had on my heart, and which I was anxious to tell my fellow-sufferers personally and affectionately. Nothing, absolutely nothing, least of all personal attacks, can shake my firm conviction that the deaf can very well communicate with each other without signs, if they only earnestly and honestly strive to do so. My experience of many years, the many examples personally witnessed by me, the inevitable final victory of every higher intel-

ligence and deeper thought, are to me a sufficient guarantee of a future world of the deaf without signs, in so far as the deaf are persons of intelligence. But there should be a strict separation of the deaf in two classes: the mentally weak deaf and the mentally normal deaf. These two classes should be instructed separately, the first mentioned exclusively by the sign method, the second without signs in the higher grades. To follow this plan is an urgent necessity.

The "Organ" summarizes the main points of the address as follows:

1. We, the deaf, must consider the ability to speak as a sacred privilege granted to us as to others by Mother Nature which our defect has only crippled, but of which we have not been deprived by the loss of hearing, for nature has endowed us likewise with complete and perfect organs of speech. But let us not forget that our speech can be kept up only by constant practice and observation.

2. As well as the deaf can communicate with hearing persons by speech, just as well, and better, can they thus communicate with each other; and they should do this so as not to lose their ready lip-reading and speaking. Just as little as they need signs in reading, to confirm and make clear what they read, just as little do they need signs in spoken conversation.

3. Signs or mimics are not "original," not "natural," but a makeshift for remedying a natural defect. For us, the deaf, they are of questionable value, over against the rest of the world they have no value whatever; and, consequently, even a slight ability to speak is preferable; all the more as signs are apt to lead to a neglect of speech, and cause a very limited and partial use of the stock of words accumulated at school.

A SERIES OF TESTS IN LIP-READING.

By A. Hansen, Nyborg, Denmark.

When several years ago the Forchhammer phonetical mouth-hand alphabet was introduced in the Nyborg school for the deaf, a great many tests in lip-reading were made to acquire material for later comparisons, as the possibility presented itself that the introduction of this new means of communication, not only between the teacher and the taught, but also between the pupils themselves, might interfere to the disadvantage of pure lip-reading, that had until that date been the sole means of addressing the children of the school. It was of great importance to have these tests based on scientific principles.

A number of stories or parts of stories were selected from a reader compiled for the advanced classes in hearing schools, to make it sure that their contents were quite unknown to the pupils. And great care was taken to exclude the possibility that any of the children should know anything of the stories beforehand. Sentences, if containing more than a few words, were cut up in divisions not to contain more than three words on an average in each division or period. Other stories were dictated word by word from the beginning to the end.

To make the tests more complete and, if possible, still more conclusive, other stories were dictated backward, word by word.

All children having any remnant of hearing that possibly might be an aid were discarded from the exercises. The pupils were placed so that an open space was secured between them large enough to make it impossible for them to copy from each other.

Time was taken[1] for the duration of the lip-reading and reproduction of each dictated period, whether this contained one single word or more. And by the simple process of division you get the average time for each word in any dictation.

As it is generally supposed that greater or smaller opening of the jaw influences lip-reading somewhat, the distance between the

[1] To secure exact measure of the time a special watch was used of the kind that is provided with a supplementary hand that indicates fractions of seconds, as usually employed at race-courses on the turf, or elsewhere.

front teeth on the vowel "a" was taken of each teacher when dictating any story. To make it easier to calculate the average percentage of mistakes each dictation contained exactly 50 words.

As no changes were made in the text of the stories to make the language simpler, it was rather a severe test for our children, inasmuch as many words were presented to them that they did not know at all.

The first set of test dictations was compiled during the school-year 1901–02; the second series of similar tests was produced in the school-year 1904–05; and the third and last one, 1906–07.

Owing to the stability of the personnel connected with the royal schools for the deaf of our country, it was, with two exceptions, the same teachers who dictated in the said three school-years.

The same selection of stories has been used at the test dictations, and the proceedings have been entirely identical on the several occasions.

The material thus gathered gives a reliable as well as scientific basis for making comparisons in the capacity in lip-reading that these many children possessed.

Only the four upper grades of the pupils were subjected to the tests, the fourth and fifth classes forming one group, the sixth another, and the seventh class the third group.

The figures and statements that follow are taken from an article of Prof. N. K. Larsen, in the March issue of Nordisk Tidskrift for Döfstumskolan.

A comparison of the dictations of 1901–02, when the pupils were not entirely familiar with the use of the phonetic hand-positions and those of later dates, shows that the pupils now get more assistance from this means.

The average percentage of mistakes where the mouth-hand alphabet was used by the teacher in dictating was, 1901–02, 9%, whilst this percentage was reduced to only 4% in 1904–05.

Comparing the backward dictations of 1901–02, where the teacher did not use the alphabet, with those of the same kind of 1906–07, you will see the percentage of mistakes has increased from being 36% to 40% in 1906–07.

For practical purposes this fact is of no importance, as this manner of speaking is not in use at all. Maybe it indicates that, as the pupils are now much more accustomed to understand everything that is said to them because the teacher employs the mouth-hand alphabet in passages where he believes the pupils would miss the

point if not having this aid, they now refrain from writing what they do not fully comprehend. But maybe, again, it simply shows that the pupils have retrograded in lip-reading words without context.

The statement: the easiest test for lip-reading is the dictation of single words of a straightforward text, seems to be proved by the figures.

With periods of single words you get only an average percentage of 25% of mistakes, whilst you get 32% when the periods average three words.

Five of the pupils have been tried both in 1904–05 and 1906–07. And as the standard of the text in the stories is the same, both for the older and the younger groups of pupils, it is not surprising that the average percentage of mistakes has gone down for these five pupils through the greater command of language they got in the two years between.

At the test of 1904–05 these five pupils had 26% of mistakes, and of 1906–07, 22%.

It is interesting to notice that the tests show that the teachers have spoken to the children with less exaggerated opening of the mouth in the last tests than in those made in 1901–02 and 1904–05, and that, in spite of this, the results of the lip-reading are better, a thing that disproves the common belief that the more you open the mouth when speaking to deaf persons the better they will comprehend you.

The average distance between the front teeth on the vowel "a" was for all dictating teachers 16 millimeters in 1901–02, with a result of 36% mistakes, whilst an average distance of 14 millimeters reduced the mistakes to 31% in 1906–07.

When comparing the compilations of the tests for 1901–02 and 1906–07 you will find that results in lip-reading for the two oldest groups of pupils of the said years were, respectively, 29% and 20% of mistakes, which seems to evidence that the introduction of the phonetic mouth-hand alphabet has in no way injured the pure lip-reading. On the contrary, *the mouth-hand alphabet has produced better lip-reading in the school.*

The usefulness of this means of communication, that supplements the movements of the speech organs and gives a token for all invisible positions of these organs, may be stated thus:

1. It facilitates the articulation for the small beginners, and at the same time saves the time of the teacher.

2. The pupil gets more language and more real knowledge.

3. The pupils use fewer signs in their intercourse outside the class-room.

The best results obtained by pure lip-reading were in the series of dictations where only a single word was spoken at a time, the percentage of mistakes being only 25%. If that figure is compared with the percentage that was found in the parallel group of dictations—the single worded—but where the mouth-hand alphabet accompanied the teacher's words, you find only 3% of mistakes; or, in other words, the mistakes have gone down from 25% to 3%; that is to say, out of each 25 mistakes the 22 have been eliminated by the mouth-hand alphabet, or 88% of mistakes committed through pure lip-reading were overcome in supplementing oral speech with these movements of the hand.

One speaks a little slower when accompanying speech with the hand. In the test series of 1901–02 the average time for periods of three words at a time was exactly 1 second per word; if plainly spoken in the ordinary manner with the mouth alone, it took but 0.7 of a second per word.

In the series of 1906–07 the average duration per word was, respectively, 0.6 and 0.5 of a second. Thus, though the teachers now use the alphabet with far greater ease than at the beginning, the use of it still handicaps the speed of the spoken word slightly, viz., 0.1 of a second per word.

Prof. Larsen thinks this retarding tendency of the mouth-hand alphabet when used in connection with speech is an argument in its favor, as it prevents its excessive use, it having the effect upon the teacher that he does not want to use it unless he feels it really necessary for the satisfactory comprehension of the address by the pupils.

EYESTRAIN AND ITS CONSEQUENCES.

J. ERMOLOFF, NEW YORK, N. Y.

Dr. George M. Gould, "the highest living authority on the so-called reflexes from eyestrain," says that this functional disease, "directly and indirectly, is the cause of more suffering than all the organic diseases combined."

A statement like that, if construed as a warning, makes one wish he knew more about the eyes. It is of special, vital concern to those who have already experienced one of nature's strongest shocks, the loss of hearing.

What is the nature of eyestrain and what causes it?

The chief defects of vision are near-sightedness, over-sightedness, astigmatism, and old-sightedness. The last, which in medical terms is called presbyopia, is developed during old age and does not concern us for the present. The first three, near-sight, over-sight, and astigmatism, are caused by imperfect structure of the eye and thereby hamper normal function.

It is necessary to know that the retina of the eye is the chief and essential organ of vision, since it serves the purpose of vision by means of which the optic nerve is excited to its appropriate activity.

When the eye is in a passive state and fulfills its functions properly, parallel rays of light are brought to a focus when they reach the retina, and the result is a clear and defined image. In the condition known as near-sightedness, this does not take place. The parallel rays of light are brought to a focus *before they reach the retina,* and the result is a patch of light instead of the defined image which is necessary to vision.

In far-sightedness the condition is reversed. Here, parallel rays of light are brought to a focus *behind* the retina, and the result is again a patch of light instead of the defined image. The term far-sightedness is really a misnomer: the distant object is seen but in a blurred state, and there is a constant effort to bring the image forward upon the retina.

The constant muscular exertion to bring images of objects

in proper position upon the retina is the cause of eyestrain and its multiform evils.

It is by no means uncommon for the two eyes of the same person to be of unlike power in seeing objects from a distance. The difference may be of every possible kind, one eye being normal and the other imperfect; or the two imperfect in different degrees. When this difference is slight, it produces no inconvenience, but when it is clearly defined there is a disturbance of vision and is what is called astigmatism. According to Dr. Gould, it is "one of the greatest causes of suffering in all civilized countries."

Even excessive use of normal eyes or work at close range brings on the same troubles. "Wherever there is eye-labor at 'near-range,' as in reading, writing, sewing, mechanics, art, science, commerce, etc., there, beyond question in one-half the workers, is eyestrain of a disease-producing kind."

Civilization has increased the eyestrain by a thousand occupations which demand "near-work" with the eyes. Our complex industrial system calls for an army of clerks. Close, prolonged study in our public schools is the ruin of many young lives. Dr. Cronin is authority for the statement that in New York city over 30 per cent. of the school children are suffering from gross forms of defective eyesight, and that the "worst defects are not included in these statistics."

The examiners in Quincy, Mass., report that in the examination of "hundreds of thousands of school children, from twenty-five to thirty-five per cent. of them need the services of an oculist or of an aurist or both."

In every profession, especially in that of letters, the evil results from eyestrain are great.

The eyes are integral parts of the human organism as a whole. They are liable to share in all morbid conditions of body or mind and vice versa. "Noises in the head," which deaf people imagine come wholly from ear disease, may be due to a great extent from the consequences of eyestrain. A gentleman who complained of "a noise or roaring just back of the right ear," after a varied experience with specialists of all kinds, could get no relief until his eyes were properly examined.

Often eyestrain is the cause of restlessness that calls for a need of walking that is astonishing,—fifteen miles per day being child's play. However, the "walking cure" is a cure that does not cure.

The cure is in artificial optical lenses. "The reflexes from eyestrain" which turn inward and harass body and mind are halted in their destructive work by properly adjusted spectacle lenses. They serve to correct or neutralize the optical defects of the eye. They help them do their work right.

Spectacles should never be worn unless the eyes have been carefully examined by a competent physician. Prescribing lenses requires medical skill and scientific knowledge of a high order and at best is a painfully delicate work. To the optician that task should never be intrusted.

Distressing noises in the head are familiar symptoms to the deaf. The loss of hearing is not nearly so hard a burden to bear under as that furious din that is all the time going on. They are difficult to explain, but they are constant. There are as many variations of them as there are individuals. From the sing of mosquitoes to the whistle of a locomotive they form a strange, incoherent wail as if from another world. The insane asylums harbor many who succumb to their evil influence. Fatigue, mental or physical, aggravates them, so does illness,—however slight. It is too much to hope that the head noises will wholly disappear, as long as the hearing apparatus remains diseased and ineffective. But the hope that they can be much alleviated is one founded on experience. The eye, nose, and throat bear a very close relation to the ear—especially the eye.

What happens if a person is bereft of hearing? The eyes are called upon to make up the deficiency. If he learns to read lips in order to put solitude behind, the eyes must work strenuously. It needs keen vision and healthy brain-action to comprehend the visible motions of the vocal organs in speech. To a pair of strong eyes lip-reading brings fatigue, how much more so if the deaf person has also weak eyesight?

Books and reading are to him peculiarly tempting, especially so in this age of newspapers and libraries. But with the pleasures and profits of reading come also its perils.

Nothing that concerns the preservation of the eyes can be a light matter to the deaf. Sight is the only avenue of communication with the outer world. Deprivation or even impairment of vision would be the greatest calamity that life could offer. There is a note of special warning in this to the deaf.

EDUARD WALTHER.

By A. Hansen, Nyborg, Denmark.

This summer, in the most beautiful month of June, death took from us one of the most prominent men of the present day in our profession, School Councillor Eduard Walther, of Berlin, Germany, at the age of 68.

He was born in a small village not far from Wittenberg, in Prussia, where he attended the public school of the place, eagerly anticipating the while entering college. But the premature death of his father made it necessary to abandon this much-cherished wish. Later on he succeeded in being admitted into the seminary at Weissenfels. After having passed his examination he was induced to accept an appointment as under-assistant in the school for the deaf connected with the seminary, where the famous educator of the deaf, Moritz Hill, was head master. Originally it was against the inclinations of the young man to take up the teaching of the deaf, but under the influence of the Altmeister, Moritz Hill, the young teacher soon became imbued with deep love for the work. As Hill was often ill, young Walther took the place as leader in the head master's absence. His service was also often desired in the seminary.

In the year 1879 he was appointed as head master of the school for the deaf at Homburg, where he did good work, till in the following year he was appointed head master of another school for the deaf in Wriezen. Here he had the opportunity to engage several new teachers, selected by himself and partly trained by himself, and soon the greatest cordiality was conspicuous between the corps of teachers. This circumstance made it somewhat difficult for Walther to accept the offer tendered to him, in the year 1885, to undertake the leadership of the great royal school at Berlin. After long hesitation, finally he decided to go to the capital of the German empire, to one of the most important positions within our profession in the whole world, as he had not only the directorship of a famous school, but had also to direct the training college for the future teachers of the deaf in Prussia, connected with this institution. Walther's eminent ability was of highest importance to the students, and to him-

self the daily companionship with the 10 to 20 young students of both sexes constituted a valuable mental refreshment. More than 150 teachers have during these 23 years of his career profited by his tutorship.

Besides the above-mentioned training college, there is still another course connected with the Berlin institution, namely, for teachers of more mature age, preparing themselves for the diploma of head master. Director Walther was just the right man in the right place, with the necessary authoritative power and influence on these students of advanced grade.

Eduard Walther was not only an intelligent worker, but also untiring. He not only found time to discharge the many duties laid upon his shoulders as the head of the metropolitan-imperial school and the training place for the Prussian teachers of the deaf, but he found time to spare for great activity as a writer of distinction on professional matters. His book, "Hand-book on the Education of the Deaf," Berlin, 1895, belongs forever to the classics of our pedagogy. Furthermore, he has written several "Readers" and other school books.

In 1881 he became co-editor of the German periodical "Organ," a position he resigned in 1887, when, in company with a colleague, Herr Toepler, he started a new paper, "Blätter für Taubstummenbildung," of which he continued to be editor until his death. Under his management its influence constantly increased.

Eduard Walther's high qualities destined him to become a chief amongst his colleagues, and for many years he had been the both capable and distinguished chairman of the German Union of Teachers of the Deaf. It was not only the profession that recognized his abilities, but also his superiors, who gave him many proofs of appreciation for good fulfilment of the duties confided to his care, under the form of the title of *schulrat* and several decorations.

The late director also won the high esteem of his brethren of the congregation he belonged to, who chose him an elder of their church.

In family life the late Eduard Walther was both a happy husband and father, who was delighted in spending his leisure hours in the bosom of the family circle with wife and children.

At his burial the clergyman emphasized, as a trait of character prominent in Walther, *faithfulness,* both in accomplishing his duties as citizen and as family head. "A faithful man is highly blessed."

A colleague of the late schulrat, the present editor of "Blätter," Prof. Weise, concluded an article on his late friend in the June

issue of the paper in the following terms, which I do not only wish to quote but also adopt as giving expression for my thoughts: "Now the earthen hillock arches over what was mortal in Eduard Walther. His soul has left us, but his work remains among us, and proceeds on, forever, in the history of the education of the deaf."

INSTRUCTION OF HARD-OF-HEARING CHILDREN IN PUBLIC SCHOOLS.[1]

The last report of the public schools in Berlin, Germany, relates that the number of pupils in the public schools of that city, November 1, 1907, was 228,784. They were placed in 5,069 classes and taught by 1,690 lady teachers and 3,071 men, under the direction of 282 headmasters; teachers of handiwork and drawing not being included in these figures. The number of schools were 287. The largest of these schools is number 55; it is attended by 1,250 pupils, in 26 classes.

With the public schools for ordinary children are connected four special schools, or sections, having 13 classes and accommodating about 200 pupils who are hard of hearing. The largest of these special sections contains seven classes, and is under the leadership of a trained teacher for the deaf.

The three remaining sections contain only from two to three classes, and a proper classification of the pupils is consequently not obtained there.

As only four out of the twelve school districts of the capital are provided with special branches for hard-of-hearing pupils, a wide scope is open for further extension. The need of these classes seems to be realized by both headmasters and teachers, who continually recommend to transfer many children and place them there. The staff connected with the hard-of-hearing classes is partly composed of trained teachers for the deaf. They get an extra pay of 300 marks, or $75, annually. The classes are under the medical supervision of an aurist, Dr. Hartmann.

Besides the classes for hard of hearing, the municipality has also established courses for stammering children, last year attended by 299 pupils, of whom 264 were declared cured, and only two failed to profit.

The number of pupils in schools under medical attendance was 29,662. Of that number 3,001 suffered from ear diseases, 2,107 from nose and throat diseases, and those figures were only surpassed by children suffering from visionary troubles and underfed children which respectively amount to 6,652 and 3,801.—[Blätter für Taubstummenbildung.]

[1] The arrangement in Berlin resembles what Dr. Kerr Love, Glasgow, Scotland, recommended in his address concerning the classification of deaf children, at the Edinburgh Congress, 1907, and in his paper at the Hygiene Congress in London, 1907.—A. H.

CONTEMPORARY THOUGHT.

CONCERNING THE AIM OF THE EDUCATION OF THE DEAF.

On the basis of certain theses presented to the Association of Saxon Teachers of the Deaf (Leipsic) by Mr. M. Schneider, of Braunschwerig, Dr. Paul Schumann offers in the Blätter für Taubstummenbildung (Berlin) a number of interesting criticisms and suggestions. The article is a reproduction of remarks made by the author on the same occasion in opposition to the theses, and closes with a series of resolutions that sum up the author's position. Final consideration of both the theses and the resolutions was postponed at the meeting.

The theses of Mr. Schneider are not at my disposal, but from Dr. Schumann's statements I infer that Mr. Schneider finds the practically exclusive aim of the education of the deaf in the effort to enable them to speak; that he assigns a vastly inferior place to subject-matter; that he emphasizes the well-nigh exclusive value of colloquial speech as contrasted with reading and writing; that he has little, if any, use for grammar or language-construction; and that he urges efforts to secure practice in colloquial speech also outside of the regular periods of school instruction.

Waiving the fact that Mr. Schneider's aim chooses as criterion an object outside of the pupils and ignores their right to their personality, Dr. Schumann holds that it is in itself too narrow. "Speech," he says, "is not the only aim of language instruction; all the avenues of language apprehension and all the forms of language production must be considered." And, further on, "the presupposition of social efficiency is rational thinking and rational conduct." We demand of the deaf not merely that he speak as we do, but also and primarily that he think and act as we do. The deaf must be freed from intellectual insufficiencies that exclude them from fuller participation in social life. They must be enabled to secure abundant intellectual material, a rich supply of intellectual associations, ready control of needed abstractions, clear and comprehensive judgment as to relative values of ideas and motives, of means and ends, the ability to put themselves in the place of another, to appreciate purposes and ideals, in order to develop a safe moral personality on the basis of a developed intelligence.

This, he holds, demands constant, varied, and intense consideration of subject-matter, content, and availability in life: mere speaking is inadequate. "Ability to speak is not synonymous with intellectual culture." "The deaf are not habitually, but functionally defective," and need to be stimulated in the entire scope of the function of intellect. From his concurrent illustrations the following is selected in condensed form: A deaf-mute meets a friend with baggage on the way to the railroad station. On inquiry he is told that his friend intends to pass a week in Saxon Switzerland, to stop over on his return for a few days at Dresden and possibly at Meissen. Even the mechanical apperception of this simple statement, the author holds, demands a complicated series of knowledge of things and relations, and, for true inner appreciation, "great bundles of associations flashing into union."

The hearing get most of such information incidentally in daily intercourse and casual reading, but the deaf finds himself set apart from the traditional trend of human intelligence. "He lives in a distinct world of his own; stands, as it were, at the beginning of culture. . . . He learns comparatively little by himself; most things must be imparted to him." He needs a systematic course of object-teaching that will furnish him a rich and significant vocabulary and opportunity for the intelligent use of acquired elementary forms of language. As for the hearing, so also for the deaf such a vocabulary is the presupposition for the intuitive and sympathetic assimilation even of colloquial speech. The pupils must be taught to understand the description of an object and to give it themselves: "description is a legitimate part of language utterance, as well as narrative and experience."

He rejects the objection that systematic object-teaching does not interest the children, considers involuntary interest too shifting a basis for pedagogic measures, and would insist upon the lesson even against such interest. The material, the course, and aim of the instruction have claims, as well as the child's interest, and even superior claims. The teacher must have the art of stimulating needed class-interest; and in this it is not necessary to be always childish. The pupils must be taught to concentrate thought voluntarily upon a given object, to arrange their impressions methodically, and to express them in the correct form of written language.

Now the forms of written language differ from those of colloquial speech. Hence, he insists upon the use of the reading-book, but always on the basis of previous colloquial objective teaching. The constant and ultimate purpose should be to put the children in possession of the language of books, so that they may use it spontaneously for its legitimate purpose in intellectual culture.

The advocates of (exclusive) colloquial speech must admit that it is not only a part of human language, but also that it is the form of language least adapted to the deaf and most difficult to acquire and use, since so much of what it conveys rests upon purely acoustic features. Even those best trained among the deaf will never be able

to use it in social intercourse; it will with them always be limited to conversation between two persons, and even then in halting fashion, because of the fact, if for no other reason, that the interlocutor modifies his speech in response to the real or fancied needs of his deaf friend. Hence the inadequacy and superficiality of the culture acquired through colloquial speech alone. "On the other hand, the deaf possesses the leverage for intellectual progress, the key to the dome of culture, if he can read and understand an intelligibly written book." Introduction into the language of books demands systematic instruction in grammar. With the hearing this demand may be less urgent, since they possess the vernacular which the deaf lack. It may be obviated in a large measure, too, in individual instruction, where the teacher is the constant companion and friend of the learner, but it is imperative in the *school* for the deaf, if this is to become, not a mere language-school but an education-school. The reading-books he would have well printed and suitably illustrated; the matter varied, carefully and vividly presented, broad, stimulating, rich in suggestion.

In the discussion of the means of language instruction and of the pedagogic value of various forms of expression, he starts with the proposition that instruction in oral language, and, consequently, the German method, rests upon the relative dispensableness of the acoustic factor in language. This relative indispensableness, he claims, holds good in the perception, in the production of speech, and in the control of speech movements even with the hearing who vary so widely in their sensory types. The same variations in sensory type he holds to be true in the deaf; hence he condemns the practice of *one* avenue of perception and *one* form of utterance as the exclusive basis of instruction, and claims for the teacher freedom in the choice of the means of presentation and expression in accordance with psychological and pedagogical considerations.

In the instruction of the deaf, natural gestures and word-language claim consideration, the latter in three forms: oral, written, and finger language. Audible speech he would constitute the center of instruction, not only on purely practical grounds—teaching the deaf how to speak—but because it affords an incomparably effective means of intellectual discipline. The use of gestures he would only rarely and exceptionally employ. Even with the less gifted deaf he would adhere to oral instruction, as this involves the optical factor of lip-reading, stimulates activity of observation, and aids in overcoming the difficulties of the latter; these difficulties not depending wholly on optical memory, but also on inference, association, and familiarity with the subject of conversation.

The written language-forms, which with the hearing constitute a secondary acquisition, are to the deaf who acquire them at the same time with the sound-forms an equivalent primary component of language. Because of their remoteness from the meaning involved they do not, however, present a suitable basis for instruction, but do afford valuable help at all of its stages. Moreover, they enrich the

word-associations, add to mobility in the use of language, and exert a favorable influence upon the pupil's entire inner life.

For the finger-alphabet he finds no legitimate place in the schools for the deaf. On the other hand, he recommends during the first year in school the additional use of written characters and varied manual occupations for purposes of self-expression, on the principle that every impression must have its correlate expression "in speaking, writing, or doing, in its widest sense."

Mr. Schneider's demand for opportunities in the practice of oral language also outside of instruction periods, our author would extend to a demand for opportunities for further intellectual development outside of instruction periods. For this purpose he asks, first of all, that the actually feeble-minded be instructed in separate classes, or even in separate institutions; that the number of pupils in a class be reduced; that during the first period of oral work an assistant, at least a well-trained kindergartner, be provided; that overgrown institutions be divided; that a ninth school-year take the place of the recently established supplementary schools; and, above all, that every institution be supplied with the necessary employees for the care of pupils outside of instruction hours.

The failure to use oral language on the part of the deaf is due wholly to lack of companionship and practice; it is fully explained when we compare the vast and constant opportunities of the hearing child with the half hour of limited opportunity of the deaf child. Have we, therefore, a right to close all other avenues of language if within the institutions themselves they fail to attain such by the single oral medium? The children need sympathetic companionship, play, occupations—above all, live reading matter, picture-books, familiarity with timetables, money, the directory, the dictionary, and other practical affairs of daily life.

He closes the article with two sets of these. The first of these asks rejection of Schneider's theses, because, 1st, they attach too much value to a mere portion of instruction; 2d, because they reject effective helps and indispensable subjects of instruction; 3d, because they undervalue the importance of objective material; 4th, because they fail to take into account the abnormal relation of the deaf to language. The second series asserts that, 1st, it is the most important task of the instruction of the deaf to secure on their part correct thinking and rational conduct; 2d, that this implies a certain scope and readiness of perception; 3d, that, therefore, objective teaching must receive requisite consideration; 4th, that this is attained by the exploitation of all pedagogically admissible means of presentation and expression, by the methodical treatment of all subjects of instruction, and by securing the needed equipment for teaching and learning, by the earliest possible introduction of reading matter into the work of the school, by perfecting the inner organization of the institutions. W. N. H.

"OLD PROBLEMS NOT YET SOLVED."

In the March number of "L'Educazione dei Sordomuti," Prof. Molfino published an article entitled "Old Problems not yet Solved," in which he wished to demonstrate that the meager results of the pure Oral method, which discourage the Italian teachers, should not only be accounted for by the reasons adduced by Prof. Ferreri, principal of the National Institute of Milan, at the first Meeting of Teachers held in Rome—in "Method of teaching language used until now—nature of the deaf-mute—mistakes of the parents for which we pay the penalty" (Acts of the Riunion, Thesis IX)—but also by the vast and varied program of studies. This program is the natural effect of not having understood the theory of a similar training in language, together with the gaining of a fund of knowledge similar to that of the hearing child before entering school, of which Prof. Ferreri calls the one the *bread* and the other the *butter* of life.

Prof. Molfino also finds that Prof. Ferreri contradicts himself in concluding—after the premises already quoted—"that we must today recognize the fact that the complaints we ourselves make as to the results of the modern school are almost without a foundation when the Oral method is practiced with good judgment and just aims," and that he is still more in contradiction in his declaration at the Congress of Genoa in 1892, "that he was glad to be able to affirm that we are on an equality, and not inferior to, either the Germans, French, or English" (Acts of Congress, p. 119).

To demonstrate his thesis he takes the aphorism of Prof. Ferreri: "The school for the Deaf finishes where that for the Hearing begins," an aphorism which had the good fortune to be placed in the verdict, and approved without discussion at the Riunion in Rome. After making a just comparison with the school of the Hearing, and an arithmetical calculation of the years of instruction, he shows that in reality one wishes to obtain from the deaf child in a shorter space of time—that is, in eight years—what the hearing pupil learns in eleven years, and this also, what the Hearing has learned previously to his entering the elementary school, together with what he learned there. Therefore, Molfino says, instead of the aphorism of Ferreri, one should substitute the following: "The school for the Deaf finishes with that of the Hearing."

He thinks that with a clear definition of the *bread* and *butter,* already quoted, some light may be thrown upon the question of the *results lacking.* He thinks he can obtain the desired object by changing the conception, and in order to prove this he examines the two terms in a dialogue, asking of what does this *butter* consist which is outside of our specialty, of our schools for the Deaf:

A small fund of knowledge, *i. e.,* to know how to read easy elementary books, and to write what they know how to say; but this is not enough, for they need a little arithmetic—the four operations; but this again is not sufficient without problems and without a metrical system.

Notice, however, observes the author, that this is exactly what is taught in five years in the school for the Hearing.

But again, one cannot send the poor deaf-mutes away from school without a knowledge of their duties in the family, or as a citizen, a workman, a

Christian. As a workman or peasant, it is necessary to have some knowledge of arts or trades; as a citizen, of a little geography and history. One might perhaps omit sacred history, yet it is linked with religious doctrine, and the Old Testament is connected with the New.

In fact, together with the *bread,* one demands the whole meal. Here, therefore, it is shown that to the specialty of our school for the Deaf must be joined all included in the elementary school for the Hearing. Hence, may it not be said that the fund of knowledge (butter) has taken, in a measure, the place reserved for language (bread)?

Can it be said, however, that the Deaf person instructed by the Oral method has not attained what was expected? No; in ideas he succeeds equally well and perhaps better than the hearing pupil, although he expresses himself with great simplicity of form, yet, in compensation, with greater security, derived from the practical and rational method, which, even if it does not influence so greatly intellectual activity, yet has importance for the formation of judgment.

Therefore, if something is lacking in the Deaf taught by the Oral method, it is always a lack of *bread, i. e.,* of the development of language; and if one adds the program of the primary school for the Hearing, one does not entirely cover that of the special school for the Deaf as regards progress in language.

The reasoning is correct, says Molfino, but the conclusion is a paradox, and is even a contradiction—and why? Because this development of language, which the hearing child has already fairly begun when it enters school, has not yet been properly defined. At this point, to demonstrate the necessity of changing the terms, he argues thus:

As *bread* is not *butter,* in order to know what the first is, let us exclude all the matter of the second; thus, for example, let us say that religious and civil duties being butter, are not essential for the education of the Deaf. On the contrary, they are most essential. But this is not the question; the question is that hearing children before entering the school can speak and understand better than the educated Deaf.

What do these hearing children speak of and what do they understand? Religious and civil duties? O no, only in a small way, but with a greater perfection of language than that of the educated Deaf. But in order to teach the Deaf to speak and understand should one abstain from teaching the many ideas of duty? No; both must be given. Which of the two is the more necessary? Ideas of duty.

Evidently here the two parts are reversed, the ideas are *bread,* because they are the more necessary, and the *butter* is the language of the hearing child, already referred to.

Hence, bread is everything, because it is those ideas which the Oral method gives to the Deaf, making of him a good Christian, a good citizen, etc.; and while this result may also be obtained by other methods, it is obtained without the advantages of speech, of a better written language, and of connecting the Deaf more closely to society.

But, it is objected, the language is not spoken clearly; it is read with difficulty from the lips, and not understood well. This may be, but still the Oral method educates the Deaf more completely, and if there is a defect in the result, it is a defect of *butter.*

Prof. Molfino draws his conclusions, therefore, of the superiority of the Oral method, even if it is not possible to reach the goal proposed at the Riunion in Rome, viz., that the Deaf graduate should possess a knowledge of language equal to that of the hearing child when he first enters school—for this is an ideal impossible to attain at present.

Prof. Ferreri replied to Molfino in an open letter, which appeared in the April number of his magazine. He says he is glad to receive the reproof, because when an author is discussed it is a sign that he has given food for thought.

As, however, he desires the improvement of the school, he would have wished that the criticism had proved him to be in the wrong, in part at least, in what he had said at the Riunion of Rome.

Again, today, however, he must repeat what he then said about the method, the school, the teachers, etc. Since then much has been said that is new, but nothing has been done. This is because, in some institutions, the teachers are forbidden to know what is said or written, lest it should awaken life and movement in the school; for, unfortunately, it has not always been the aim to improve the school and to insist upon the practice of the Oral method. On the contrary, they have tried to contradict the assertion of facts by feeble arguments. However, apart from this misery, we are theoretically on a good standing, as I said at Genoa, in regard to the knowledge of the Deaf and the limits of his education. But, practically, one still follows the manner of a century ago. Each does as he pleases, thinking he has no need of advice or suggestions. This is the reason of the difficulty in agreeing as to the "results to be obtained."

A good opportunity for discussing this point was offered at the recent Congress at Bologna, if the colleagues had not come unprepared and if the Congress had not closed after only a few beats of music, with the usual votes, which no one listened to.

This is the reason Prof. Ferreri insists on the necessity in the meetings of treating exclusively of the school, without the intervention of protectors and friends, who finish by handcuffing us. An agreement as to the results to be obtained must come from a calm discussion of the program.

At Rome the beginning was good, if it had not been for the inevitable deficiencies; these were not, however, of the nature or manner representd by Molfino. It is true that the limits of instruction have been exaggerated, either in demanding too much or by a too great restriction of the program.

In regard to the ponderous criticism of Prof. Molfino as to the action of the Riunion at Rome, where it was decided, by general consent, as to what should be considered *bread* and what *butter,* Prof. Ferreri replies he is not convinced, and must continue to call *bread* bread, and this is the teaching of speech and language. The fund of knowledge may be more or less rich or extended, but is always *butter,* because its richness and extension depends entirely on language and on the ability in lip-reading.

The aim of the modern school for the Deaf is to teach the Deaf to speak and to accustom him to understand what others say. To succeed in this object it is to be expected that there is something in the school to talk about, and this is the *butter.* The principal difficulty, especially in boarding schools, lies in the poverty of the subjects. But subjects of conversation, says Ferreri,

from his own experience, one can always find in and about the school, and precisely in all kinds of useful knowledge for practical life.

Rather we should be persuaded of the traditional defect of our schools, *i. e.,* of the formalism which the teachers obstinately adhere to, which limits too much the division of instruction into subjects, almost as if it were possible to give ideas without the corresponding language.

As to this he relates an anecdote which confirms his statement. Once in an institution they attempted to introduce teaching according to subjects. And what happened? At every new word, at every new sentence the teacher of arithmetic or history or religion would say to his pupils: This the teacher of language will explain to you. It is easy to imagine the result; they were obliged to return to the old system, although, even with the old system they continued to make the pupils learn on the blackboard so many useless and stupid things from their enthusiasm to carry out the program of what he declares to be *butter* and Prof. Molfino would wish to be *bread.*

Prof. Ferreri concludes thus: "Let us make the Deaf speak and understand what we and others say, and the ideas will penetrate his brain through his eyes, just as in the normal child through his ears. And for this the *bread* of instruction is language only, so much so, in fact, that in all schools they complain of the lack of language teaching. The common pedagogical mistake is this: That from the kindergarten up they try to give ideas instead of beginning to accustom the child to speak, and to *speak* well that which it sees, feels. and desires. This should be the program of our school."—[Translated and condensed for the ASSOCIATION REVIEW, by F. Colombo, Milan.]

A HAND-TOUCH ALPHABET.

The March issue of "Blätter für Taubstummenbildung" contains an extended paper by G. Pipetz, of Graz, Austria, relating his experiences in the education of a deaf boy, Hans, who also suffered from very poor eyesight.

Hans, who was the son of well-to-do parents, was, to begin with, examined by the famous aurist, Prof. Urbantschitsch, in Vienna, who recommended the use of special exercises for the development of hearing which, however, proved to be of little avail.

The boy was later placed under the care of the director of the blind school in Vienna, Mr. Heller, who, at that time, had just written a book on "Psychic Deafness," in which he set forth the opinion that many cases classified as deafness were in reality but psychic troubles in the nerve centers, and if properly treated, after the nature of the disease, good results would soon be gained. Hans was under treatment for 1½ years, but did not make noteworthy progress.

The parents then placed him under the care of Mr. Pipetz, who immediately began articulation lessons with him, and for the rest taught him after the principles used with deaf children. Instruction was seriously handicapped by the lacking vision, and glasses proved to be valueless. The teacher continued to utilize the hearing power Prof. Urbantschitsch had found in the boy and believed he derived some aid from it.

Some time later the teacher and pupil consulted another famous aurist,

Dr. Barnick, in Graz, who, however, came to the surprising conclusion that Hans was totally deaf. The teacher protested and demonstrated to the doctor that Hans could both perceive and reproduce words, as well as short sentences. The boy even understood some of what the doctor said to him, but notwithstanding this Dr. Barnick declared again that the boy was totally deaf.

The teacher doubted the correctness of this statement, but through a series of exercises, where he placed a thin sheet of paper over the ear of the boy, he discovered that the doctor was right, and that Hans had never perceived the sound, but only the friction of the air when his teacher spoke to him. Mr. Pipetz got now the clue to an enigma that had puzzled him many a time—why Hans never could understand when he spoke the sound "l" or syllables beginning with "l," this being due to the escaping of the air in two currents through the corners of the mouth, and therefore not striking the ear of the pupil.

Owing to the very poor vision the teacher for a long time pondered over the question, which avenue was the best to follow for the further education and instruction of the boy—1, the failing eyes; 2, the tactile nerves in and around the ear; or, 3, the tactile nerves of the fingers—for Braille writing.

Mr. Pipetz was aware of the use of the manual alphabet in the instruction of deaf-blind children, which class his pupil is nearest to be compared with. He thought it rather unwise to employ movements of the fingers to sightless persons, such as were conceived of and elaborated for seeing pupils.

As he had read something about a special glove provided with letters on it, used by an educator of a deaf child, he conceived the idea of devising a new alphabet for blind pupils. He knew pretty well the marvellous results Helen Keller had attained through the means of communication of the manual alphabet, but he did not hesitate in trying to find a new pathway.

His system consists of a set of touches and strokes on the various parts of the pupils's fingers and hand, and it works splendidly.

The pupil is placed close to the right hand of the teacher, and this alphabet is easily used when out walking. Hans learned the alphabet in one lesson and his parents and brothers and sisters soon used it also.

Since the introduction of this system the teacher thinks it a treat to enter in conversation with Hans.

This alphabet is a specialty for the intercourse with deaf-blind persons and surpasses the hitherto employed manual alphabet both in regard to speed and plainness, and it was also better than the Lorm alphabet, which is elaborated upon similar principles.

Intending a journey of study to America this year, Mr. Pipetz first wrote and explained his system to Prof. G. Riemann, connected with the education of deaf-blind children in the school home at Nowawes, in Germany, asking his opinion and valuation of it as a means for the instruction of these children.

Mr. Riemann's views are given in the April issue of the Blätter.

He doubts whether the system is applicable to all deaf-blind pupils, basing this opinion on the experience he had with a little pupil who did not respond to the touching limited to one single finger, the tactile sense not being sufficiently developed. Whilst he derived some impression from the more compact touch of the ordinary manual alphabet, Prof. Riemann believes the manual alphabet is preferable, at least for children on the primary stage of instruction.

He also points out that Pipetz did not devise and use the system before Hans had reached a more advanced stage.

Mr. Riemann calls attention to another, in his argument, objectionable quality of the system, namely, the close proximity of teacher and pupil during the lesson, and he thinks it unsafe for a deaf-blind boy of the ages between 14 and 17 years to sit so close to a lady teacher.

He does not find it either speedier or easier than the ordinary alphabet, and he prefers to continue to use the latter in the school home in Nowawes, where the present number of pupils is 11 deaf and blind children, among whom one is also feeble-minded.—[Translated and condensed for the ASSOCIATION REVIEW by A. Hansen, Nyborg.]

HEARING MUTES.

"Have you not subjects who understand the spoken word, who, therefore, not only hear, but hear intelligently—who have neither physical nor verbal deafness, and who, nevertheless, are unable to speak?"

This is the very clear question propounded to me some days ago by our President,[1] and to which today I outline the preliminaries of a reply.

Let us first inquire what data we find in the Institutions for the Deaf. Dr. Renaut, of the Academy of Medicine, reports that in all schools for the Deaf are found individuals who do not lack the sense of hearing, but who suffer from motor aphasia.[2]

Abbe Jules Tarra, of Milan, reports two successful attempts to teach speech to aphasic children and says that children who are mute without being deaf should be provided for in the special establishments for deaf-mutes.[3]

Dubraule (Paris), Bikkers (Rotterdam),[4] report similar cases.

In his treatise on the tardy *appearance and development of speech in children,* Dr. E. Ozun devotes one chapter to motor aphasia, or aphemia, but with Ladreit de Lacharrierè, Désirè Bernard, and others, doubts whether complete aphemia really exists in children.[5]

Without undertaking to solve the problem I am happy to be able to report the result of a personal investigation.

On the 30th of April last I received a letter from Mr. Sternheim, president of the Society for the Blind, Department of the Nord, as follows:

I have here a blind child aged 6½. Besides his blindness the child, who seems to be bright and intelligent, has a defect in his speech. The defect is, that he is unable to articulate any consonant. He says: *"On, ou; eu, eu"* for "Bon jour. Monsieur" (Good morning, sir).

Mr. Sternheim brought the blind child to me on Thursday, May 15.

Little Henry, a ward of the Public Charity, is six and a half years old. He only began to walk at five years. He has a large head, with spherical fore-

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[1] Dr. A. Binet, director of the laboratory of psychology of the Sorbonne.

[2] International Review of the Education of the Deaf, Vol. IV, 1888-'89, pages 321 and following.

[3] J. Tarra, Historic Notes, 2nd edition, Milan, 1896.

[4] Report on the Institute for Mutes, Rotterdam (1893-'94).

[5] Reflections on the causes of delay in appearance and development of speech. Doctor's thesis. E. Ozun, 1904.

head, bulging at the upper part, his ears stick out. His tonsils are enormous, although I am assured they have been once cut out. His dentition is not that of one tardy in development. The teeth are healthy and well placed. The lower jaw is undeveloped, and he refuses meat, being unable to chew it.

The child was examined at the clinic of the National Institution by Dr. Castex, who advised the removal of the tonsils and found nothing abnormal in the organs of phonation.

On leaving the clinic I examined the patient again, and he submitted unwillingly to a cursory examination of his mouth. I found nothing unusual save that the tongue was thick and soft. A country specialist had diagnosed a paralysis of the soft palate. Still both the soft palate and the uvula have muscular contractions and the voice is nasal only at times.

The hearing is normal. The patient hears all that is said to him, even in a low voice, and at a distance. He obeys orders given to him. He knows that he is in Paris, that he came on the railroad, that he is going away this evening. He remembers what he ate at different meals, knows the names of his nurse's children, and answers questions after his own fashion. I say in his own fashion, for this child who pronounces correctly all the vowels except "u," is absolutely unable to sound a single consonant.

He is asked if he loves best papa or mama, and he answers: *a, an; et e; é, è,* which signifies, maman et Germaine (mama and Germaine). His nurse asks, reproachfully, if he does not love papa, Jules, and other members of the family. At each question the child caressingly, in his onorous dialect which the nurse understands, testifies to his affection for papa, Jules, etc.

His foster mother speaks to him as to her other children, and translates unhesitatingly replies which to us are incomprehensible.

Mothers are surely inspired by divine grace.

A, i, e, o, a, a, i means: "la bière est bonne à Paris" (the beer is good in Paris).

O, oi, e, eu, é, ein means: "Au revoir M. Sternheim" (Good bye, Mr. Sternheim).

E, i; a, an; é, i means: "merci, maman chérie" (Thank you, mother dear), which he says to the nurse whenever she gives him something.

A, i, é, a means: "Henri est sage" (Henry is wise).

I, a is: nik-nak, the name of a local cake.

En, i; a, a; eu é: "Henri n'a pas pleuré" (Henry did not cry).

When we ask if he likes chocolate or cake best, he answers: *o, o, a, e, a, o* (chocolate and cake), with a fervor which leaves no doubt as to the dual object of his choice.

At lunch the nurse gives him some soft cheese, saying "c'est du fromage mon," and he repeats *o, a, ou.* He is well-trained, for he says *é, i, e, eu,* (merci, monsieur,) when given a silver coin or a sweetmeat.

His nurse says to him, "When we get downstairs shake hands with the gentleman and he will give you two sous." On reaching the foot of the stairway the child repeats the command and obeys. He remembers that three days before at Lille, Mr. Sternheim sent him a message by his secretary; on being questioned he repeats the message. In brief, the child has the mental development of an average child of 3½ years.

This tardiness is explained, says Mr. Sternheim, when we consider that

the child practically had no life up to the age of three. He was a mere human fragment showing all the signs of physical degeneracy. His strength increased after reaching the age of three, and he was nearly five when he fell into the hands of his present nurse, whose mother-love commenced the miracle by which his moral and physical development has reached the point at which we find him.

He repeats the vowels in the order in which they are said to him, provided they are not more than five. If he is told to repeat a sentence he says over the vowel sounds in the same order and with the correct intonation, but without pronouncing either consonants or diphthongs.

All the efforts made to have him pronounce consonants, whether isolated or associated with vowels, are vain.

We try without success to make him say *pa, fa, la, ma, ra,* and find it impossible to make him say either separately or in words, the vowel u (French ū), or the diphthongs ié, io, oi (ou a).

Sometimes he gives a sibilant sound somewhat resembling *"f,"* and he pronounces without much difficulty *"f"* and *"a"* separately, but it is impossible to make him combine the sounds and say *"fa"* or *"af."*

His voice is suitable to his years. He sings willingly, "The little basket," but sings very badly and sounds none of the consonants, so that unless you are told what he is singing, you recognize neither the words nor the tune.

Mr. Sternheim has undertaken to have the little boy taught to speak, and temporarily defrays the expenses of his education. We advise him to take the study of the different consonants in turn, relying on the aid of hearing and touch, and if necessary calling in the assistance of a teacher of speech to the deaf.[1]

The following notes refer to a case studied by my colleague, M. Hervaux, in 1907:

X— is a little girl six years old, in good health, she has never had an illness, and her physical development is most satisfactory. However, she did not learn to walk early, and cut her teeth late.

Her face is intelligent, and the glance of her eyes is clear and assured. The child is normally developed on all points except speech. She understands what her mother says to her but is incapable of replying in words or of expressing her thoughts intelligibly. The vowels are correctly sounded, but there are no consonants save the labials *p, b, m.* The diphthongs are also lacking. The orbicular muscle of the lips contracts to emit the labial consonants, the other movements are missing. The tongue remains inert in the mouth.

The child desires to communicate her thoughts, but she is conscious of her awkwardness, and this makes her stammer, almost stutter. Lessons in articulation were the proper remedy, and these were preceded by appropriate gymnastic exercises. The teacher working in concert with the mother, succeeded in a few months in teaching her the consonants.

The *"l"* presented great difficulties. The *"gn"* came spontaneously. The *"n"* was relatively easy. The *"r"* has not yet been achieved. In the practical

[1] M. G. Disableu, of Pont-a-Marcq (Nord), undertook the task and succeeded in a few months. From his report to the "Revue General" we learn that little Henry now articulates all sounds and pronounces every word in the language.

exercises some confusion is found to exist between the sibilants, *f, v, —s, z, —ch, j,* which are still uncertain.

The power of speech improves daily, the stammering has almost disappeared, and the entire prognosis is satisfactory.

My colleague Danjou, tells in the "International Review of the Education of the Deaf," how he taught speech to a hearing mute of five years who had learned only three words, *papa, mama, and dada.*[1]

He first made use of preparatory muscular exercises of the organs of speech, and passed successively to the articulation of sounds, of syllables, and the pronunciation of words and phrases, precisely as in the instruction of the deaf. The teacher appealed at the same time to hearing, sight, and touch. Whispers were found to be effective as fixing more securely the attention.

More than three weeks were needed to enable the little one, who could say *papa* quite fluently, to add a third syllable, and say without hesitation *papapa.* The words *"pictures," "good morning, sir,"* were the first pronounced under rather curious circumstances reported by Mr. Danjou. In the end the patient spoke satisfactorily.

The only case, which to my knowledge approaches the pure aphasic type, is that reported by my friend and colleague, Mr. Pautré. This case examined by Mr. Pautré in 1890, seems to approach more closely to Aphasia.

X—— of Brienon-sur-Armancon, (Yonne). seven years old. Born prematurely, of weakly constitution, and uneven gait. Hearing normal. Heard, understood and obeyed his mother's commands. The organs of speech seemed sound and yet the child could speak no word nor even articulate a sound. Notwithstanding the most earnest efforts, it was not possible to make him repeat any sound or word.

Dr. Ladreit de Lacharrière refused him admission to the National Institute for the Deaf, because he was not deaf.

In all the cases which have been reported in detail, it is to be noted that the majority of hearing mutes show signs of degeneracy or tardy development, tardy walking, dentition, mental development, unfortunate heredity, etc., and some among them have only learned to speak under a special course of instruction from teachers of articulation.—[M. Dupont, in "Revue General de l'Enseignement des Sourds-Muets" Paris. Mr. Dupont's paper was originally prepared for and read before the "Free Society for Psychological Study of the Child."]

[The "Revue General" gives also an account by Prof. Disableu of his work of teaching little Henry—the aphasic child of the above paper—to speak. This account follows:]

A BLIND AND MUTE CHILD.

This child, hydrocephalous, blind, and mute, was entrusted to the infinite devotion of Mr. Sternheim, Director of the Asylum for the Blind for the Northern District. He brought him to Paris, to Mr. Marius Dupont, who encouraged the experiment which he said would unquestionably bring good results. Mr. Sternheim's numerous occupations did not permit of his under-

[1] "Aphasia in children." International Review, Vol. XII, 1896-'97, p. 223.

taking himself the instruction of his young protégé. He then came to me, telling me of the interview with our beloved master, Mr. Dupont. Relying on his forecast, and attracted by the prospect of a new and interesting field of labor, I commenced the experiment. At first, numerous difficulties were encountered. For several days I had to contend with the undisciplined nature of the child, who even went so far as to bite my fingers when I tried to open his mouth.

After a few lessons I foresaw that my labors would be fruitful. I combined Mr. Goguillot's processes of articulation. The vowels had been conquered. I resolutely essayed the consonants. The letters *p, m, f, v,* were overcome in a few lessons. I undertook the letter *b;* after many fruitless attempts, I was obliged to take the child's hands and apply them to my cheeks, to make him feel the inflation. The seeing mute can follow this movement with the eye; not so with the blind child. We went from my cheeks to his and back again, until the *b* was conquered.

The same process was followed for many other letters. Whenever one consonant was attained, I immediately combined it with the different vowels. I found a valiant assistant in Mr. Warthel, who, in spite of his infirmity (he also is blind), had undertaken the charge of the little boy. He faithfully rehearsed each of my lessons. I was often surprised to find at the beginning of the lesson, that the letter left unfinished the previous day, had been acquired in the interval. At this moment, but two letters remain unconquered, *l* and *u*, but I do not despair of the victory.

What precise method did I follow? I can hardly say.

I was guided by Goguillot, and I practised each lesson on my own person. I sought to put myself in the place of that dear little one deprived both of sight and speech, and, almost groping in the dark, I found the key by which to open the portals of his speech. In a similar case I could only say, the talismans are courage and patience. Today the child rejoices at my coming, and my own pleasure is almost as great. I can but offer to Messrs. Dupont and Sternheim my respectful gratitude for the joy which they opened to me.

G. DISABLEU.

YOU COULD STILL SPEAK EVEN IF YOUR TONGUE WERE CUT OUT.

Some time ago we read in the papers that an artist, an Italian singer, who had lost his voice as a result of the San Francisco earthquake, in despair at the loss of his means of livelihood had cut out his tongue with a pair of scissors. Almost all those who read the item thought that, should he later recover his voice, he would be unable to speak; that is to say, to articulate; and yet this is not the case.

The tongue, which is generally regarded as the chief organ of speech, the seat of language, does not in fact play so important a part as is ordinarily ascribed to it. We know of many cases where the tip of the tongue, or even the greater part of that member, is missing and still the persons thus afflicted are able to pronounce all vowels and all consonants except those almost wholly produced with the tip of the tongue. These persons spoke very intelligibly, skilfully using the lips to replace the tongue. Professor Kussmaul

very truly said: "We are astonished when we discover how great may be the defects of the tongue, either congenital or acquired, which do not prevent intelligible speech." Kussmaul speaks of a convert (Doctor Neumann) who claimed that after the days of the Apostles, and even in modern times, there had been miracles. Neumann cited as a miracle the case of those "African Confessors" whose tongue the heretic vandal Hunerich cut out at Tipasa, in 484. The Englishman Edw. Twisleton sought to refute the assertion, citing a number of cases, ancient and modern, which prove that even two-thirds of the tongue may be removed and the persons thus mutilated still be able, by constant exercise, to acquire a distinct, intelligible speech. Thus our unfortunate Italian artist may eventually succeed in articulating acceptably; we wish him a speedy recovery of his voice.

It will be of interest to quote here the words of Baron de Boyer in his "Treatise of Surgical Maladies," which was published nearly a century ago: "Individuals who have lost their tongue from any cause are generally deprived of the power of speech, for a longer or shorter period of time. The acts of deglutition and of mastication are performed with difficulty for one or more years: if we examine the interior of the mouth we see a double, teat-like protuberance, mobile and slight, which fills the space ordinarily occupied by the base of the tongue. But when this organ has been missing for a longer period, the mutilated persons learn by degrees to speak a few words; finally, they in many instances speak very distinctly, and masticate and swallow with ease. In some cases physicians have doubted the loss of the tongue in those persons who exercised perfectly all the functions ordinarily performed with the tongue, and were only convinced by personal examination. Sometimes, however, the persons who have lost their tongue do not recover the power of speech, even after a long lapse of time. Surgery can assist victims of such an accident by means of a small wooden bowl-shaped appliance placed back of the incisors of the lower jaw."

Every teacher of the deaf will understand the part played by the concave appliance placed back of the lower incisors. For my part I would use in place of the "wooden bowl" a rubber mold, varying in size and shape according to the size of the tongue still remaining, in order to widen the second region of articulation, and bring it in touch with the back of the mouth where is found the remainder of the tongue.

We quote as an interesting curiosity the story told by Ambroise Paré (see Boyer, p. 398). He speaks of "a certain man who had a portion of his tongue cut out and for three years could not make himself understood by word of mouth. Now, it fell out that, being in the fields with the reapers and drinking from a light wooden bowl, one of the men tickled him at the very moment that he had the bowl between his teeth, and he ejaculated a few words so as to be clearly understood. Thereafter, recognizing how he had spoken, he took the bowl once more and sought to resume the same position; and again he spoke so that he could be understood by means of the bowl; for many days he carried the bowl in his bosom to interpret his speech, placing it always between his teeth. Later (by necessity, which is the mother of invention,) he bethought him to have made a small wooden instrument, by means of which he could make understood all the words that he would speak." Paré observed thereafter the good results obtained by similar means with a lad whose tongue

had been removed and who, nevertheless, "by the means of this instrument uttered so well his words, that fully and clearly he could be understood in all that he would say and explain."—[Translation from "Revue Belge" of an extract of an article by R. Kohler, published originally in the "Revue General."]

ABRIDGED HISTORY OF A CONGENITAL DEAF-MUTE WHO GAINED THE POWER OF HEARING.

[Drawn from the Memoirs of the Academy for the year 1703, p. 8, citation as given by Buffon. See Buffon's Natural History, condensed and reduced to the most instructive portions by Bernard, Vol. III, p. 231.]

"A young man of from 23 to 24 years, son of an artisan of Chartres, a deaf-mute, suddenly began to speak to the great wonder of the whole town. It was learned that some three or four months before, he had heard the sound of the church bells and had been greatly surprised at this hitherto unknown sensation. Afterwards, something like water flowed from his left ear, and he heard perfectly with both ears. For three or four months he listened in silence, practising softly when alone the words he heard, and thus exercising himself in the pronunciation of words and the association with them of ideas; at last he thought he was able to break the silence, and he proclaimed that he could speak, although but imperfectly. Able theologians at once questioned him on his past condition, and their principal questions turned upon God, the soul, the good or evil intent of his actions. It did not appear that his ideas had extended so far. Although born of Catholic parents, and a regular attendant at mass; although he had been taught to make the sign of the cross, and to kneel in the posture of one who prays, he had attached no meaning to these forms, nor had he comprehended the meaning given to them by others. He did not know exactly what death was, nor did he ever reflect upon it. He led a purely external life, entirely engaged with material objects, and with the few ideas conveyed to him by his eyes. He did not even draw from the comparison of those ideas all the results which he might have obtained. He was not by nature mentally deficient; but the mind of a man deprived of intercourse with his fellows is so little cultivated that he thinks only that which is forced upon him by external objects. The greatest number of ideas acquired by men spring from their association and intercourse."—[J. Hogerheijde in Revue Belge des Sourds-Muets.]

PHOTOGRAPHING SPEECH.

Mr. Poincaré has just presented to the Academy of Sciences a new process for photographing speech, invented by Mr. Devaux-Charbonnel.

The vowels or the consonants, pronounced before a microphone connected with a highly sensitive Blondel oscillograph, are recorded on a photographic plate by curves characteristic of each kind of sound.

The curve of each vowel presents a complete periodicity while the record of a consonant has no periodicity.

Thus with a little practice it is possible to decipher vowels and consonants and to read a page of photographed words.

By this method, Mr. Devaux-Charbonnel, says, it will be possible to read a telephonic communication made in the absence of the subscriber. The apparatus placed in front of the telephone, will photograph on a sensitive plate the words heard by the receiver. The photographed signs will be read as one would read a page of stenographic notes. Another application of this discovery is suggested by the English physicist Duddell,—to make a photographo-stenographic record of the voices of criminals. This in connection with the thumb prints would make an element of anthropometric identification, absolutely certain and absolutely perfect. Other improvements must be made to perfect the apparatus, Mr. Devaux-Charbonnel concludes, but the results already obtained are most interesting.—[Revue Belge des Sourds-Muets.]

THE TREATMENT OF STAMMERING IN GERMANY,

At the University of Berlin there has recently been established a section for the treatment of persons suffering from stammering and other forms of deficient speech, under the leadership of Prof. Herman Gutzmann. It is the first instance of such an activity connected with a Prussian university, and under the auspices of the ministry. This institute is not only intended to receive and treat persons suffering from stammering, lisping, cleft palate, and nasality, but also as a training school for medical students and physicians as well as others who want a proper training in this special branch of science.

The need of such an institution is proved through the statement that at least one per cent of the school children in Germany suffers from stammering, viz., about 100,000 children, between the ages of 6 and 14 years; and if the number of other children with various forms of deficient speech is added thereto, the number will be doubled.

More than 1,000 young men are annually refused by the army on the ground of stuttering. Gutzmann says that it is now time that the indifference of parents to the deficiencies of their children's speech should cease, as the children are bound to be the sufferers later on in life, not only because they stammer, lisp, etc., but also because they do not get full advantage of the instruction in the public schools.—[Blätter für Taubstummenbildung.]

On the 27th of last April was inaugurated at the Normal School for Teachers of the Mute, at No. 11 Fitzroy Square, London, a tablet commemorative of Van Praagh, who died last year, and who for 37 years taught either in this School or in the Institute to which he was attached. There were more than one hundred subscribers, mostly members of the Association for the Oral Instruction of the Deaf. The Rev. H. Parez took the place of Mr. Leopold Rothschild and presided over the ceremonies.—[Revue Belge des Sourds-Muets.]

THE INSTITUTION PRESS.

THE WEAK SPOT IN COMBINED SYSTEM SCHOOLS.

Professor Hansen, of Denmark, who in 1906 made an extensive visit of inspection of American schools for the deaf, speaking of one of the largest schools in the country, has the following to say in his report:

"The method in use in this school is eclectic; the principle is that each child should be taught after the methods for which he is best fitted, which in practice is the Combined System.

"In the lower grades I saw oral work practiced to a great extent, but was struck with its diminution up through the different grades, and in the upper grades it was the silent method that prevailed. It looks as if articulation is suffocated in the companionship with signs and the hand alphabet, which, theoretically, should be an aid."

Here we have in a nutshell the most serious indictment of the Combined or Eclectic System. In theory the principle of eclecticism appears absolutely sound. In practice it breaks down almost completely, as indicated in the last paragraph quoted above.

In other words, the combination psychologic forces, the conditions of habit formation, the "atmosphere," in the average Combined System school tends with ever-increasing and overwhelming force, as the pupil develops, to the suffocation of speech and speech-reading as compared with other means of communication. Practically, the working of these forces completely upsets the scientific eclecticism which is supposed to be the justifying basic principle of the Combined System. Instead, therefore, of "each pupil being educated according to the method for which he is best fitted," we find in many schools, in practice, nearly all pupils started in oral classes, but so rapidly transferred to manual classes as they advance in age and studies, that excepting a few semi-mutes, the advanced classes are nearly all manual. Not infrequently "the System" results in consigning even most highly promising semi-mute oral pupils to purely manual classes. This surely involves an almost criminal waste of potential possibilities, of time, energy, and effort, wasted on oralism that comes to naught. In the elimination of this waste lies, we believe, the greatest hope of material improvement of our work as a whole. The most vital essentials are *adequately trained* teachers, *scientific classification* of pupils as early in their school life as possible, and concentration upon each class of the method best suited to its mental development *under a dual system* that will give each method full and fair opportunity to develop according to its own peculiar necessities. While the problem thus presented is difficult, and its practical working out, in small schools especially, is costly, there can be no such word as halt in the vocabulary of American educational progress.—[Oregon Outlook.]

THE GEORGIA SCHOOL DOING AWAY WITH SINGING IN THE SCHOOL-ROOM.

As the time draws near for the close of school we should go back and review our work for the year, and see what we have accomplished. We have had more oral work in our school than ever. This method is increasing all the time in most of the schools. It seems to develop better language, this stopping so much signing in the rooms. We have about succeeded in breaking up signs in the school-room, and find we have much better attention, and more improvement in the language of the pupils. The pupils were miserable under this rule for a few weeks, but have at last gotten used to it, and seem to like it. We hope by another year to have no signs in the school-room by the pupils and very few by the teachers.—[School Helper (Ga.).]

We hope by another year to have no signs in the school-room by the pupils and very few by the teachers.—[School Helper (Ga.).]

Brother Connor, reverse that. If any one *has* to use the Sign language for pity sake let it be the children.—[Palmetto Leaf (S. C.).]

As Georgia pupils learn best without the sign-language, and as South Carolina teachers teach best without the sign-language, why not combine the two admitted "bests" and do away with the sign-language altogether? Certainly, the ideal conditions in the school-room for the *best* learning by pupils and the *best* teaching by teachers is non-dependence upon and non-use of the sign-language by anybody for any purpose whatever.—F. W. B.

In our May number we announced that Mr. Noel G. Maddison, a congenitally deaf pupil of Mr. H. N. Dixon and Mr. F. Ince Jones, of Northampton, had been admitted as a student of chemistry on the ordinary terms at the Royal College of Science, South Kensington. We have now the gratification of recording that Mr. Noel G. Maddison has passed successfully the examination for this year in Organic Chemistry. This is all the more creditable to him from the circumstance that three weeks of study at college were lost through illness in March, and that four days after his return his leg was broken in playing football in the college team, again laying him aside.—[The Teacher of the Deaf (England).]

The following is taken from the New York Herald of May 23:

"Winning four prizes, including two firsts this year and two last year, Miss Ruby Abrams, of 164 East Sixty-third street, will complete the art course at Cooper Institute on June 4 with a record of having been the first deaf and formerly mute student to receive a dipolma from the art department.

"She has been a pupil of art ever since she was graduated at the top of her class six years ago at the Institution for the Improved Instruction of Deaf-Mutes, in Sixty-seventh street. There she learned to speak audibly and to read the language of lip movement. Now, at the age of twenty, Miss Abrams is ready to be graduated and to take up her life's work. She is undecided whether she will work as an illustrator or teach art in some deaf-mute school.

"Although all of her class instruction has been in black and white, Miss Abrams won her first prize in color work and each year with a decorative panel. The first prize, which she won this year and last, is $30 in gold. In 1905 Miss Abrams was under the instruction of Howard Chandler Christy, and she took a silver medal that year for a Christy girl, drawn after one of her teacher's originals. In the same year she won first honorable mention for a Japanese study in color.

"'The only difficulty I have met in pursuing my studies,' Miss Abrams stated, 'is that sometimes in the lecture courses my instructors would talk too fast, and I would lose their meaning. My teachers, however, have been very kind to me in the matter of slow speaking and clear enunciation, so that I could understand the words their lips formed.'"

In New York City this fall will be opened a day school for the deaf. This has finally been decided upon. The pupils of the school will be instructed by the oral method. When the idea of this school was first made public, a committee was appointed by the National Association of the Deaf to oppose it. Circulars and letters were sent to Supt. Maxwell and to the Board of Education, and President Veditz, of the N. A. D., personally wrote to parties who were conversant with the state of things in New York. From reliable sources it was learned that there were over fifty deaf-mute children in the Borough of Manhattan who either could not be accommodated in the existing schools or whose parents would not send them there. These are children of the poorer class of people in Manhattan. It is thought they can

be benefited by a day school. As it is not the purpose of the N. A. D. to oppose anything that will benefit the deaf, even in the remotest degree, it has been thought best to keep "hands off" the proposed school. If it can uplift the deaf in any way it will be doing a good work. The principals of the existing schools do not oppose the day-school plan, and one at least is decidedly in favor of it. As these principals are the most concerned, the stand taken by them has made it obvious that there may be a need for such a school. While we neither favor day schools nor the oral method, we are willing to admit that if there are parents of deaf-mute children who want such a school, they are the very ones who have the most to say in the matter. The principal and one of the teachers have taught in St. Joseph's Institute, Fordham, while the other teacher has been teaching in the Lexington Avenue school. If there are so many deaf-mute children as it is claimed without schooling advantages, these three [there are ten teachers at this time] teachers will certainly have their hands full.—[Catholic Deaf-Mute (N. Y.).]

HOW FAR TO CORRECT THE PUPIL'S LANGUAGE.

"Dr. Smith," says the Companion, "would not go into grammatical hair-splitting in correcting, but would judge every sentence by the simple rule: Would I use such language myself? If not, then correct it."

A very good rule. We believe that is the proper test, and the one we apply here. For instance, a few days ago the writer came across the following sentences in the journal of an oral pupil:

"I shall buy beefsteak for 25 cents."

"I shall cover some meat with bread."

"Mr. Milligan rode the horse and went to the ranch this morning."

These sentences, though grammatically correct, were not allowed to pass, but the following forms were given instead:

"I shall buy 25 cents' worth of beefsteak."

"I shall make some sandwiches."

"Mr. Milligan rode to the ranch this morning."

If the pupil is given to understand that his sentences are not wrong, but just slightly different from the way hearing people express themselves, he will take kindly to such correction. There is, however, another point we insist on, and it is most important. After the pupil has been given the correct forms, he is requested to copy these into a book and to drill on them until they are familiar. It is no use to give corrected forms if these are not to be well studied afterwards.—[Rocky Mountain Leader (Montana).]

A Hartford daily paper gives the following:

"Ten little gardeners at the American School for the Deaf on Asylum avenue were made happy this afternoon by the compliments of their friends on the excellence of their gardens. The occasion was an exhibition of their work from 4 to 6 o'clock. Many invitations had been sent out and a large number of visitors were present. This is the second year of work by the children, and they are doing fine work. Their gardens are entirely free from weeds, and the vegetables show by their thrifty state that much care is given them. Each garden is five by eight feet. Each garden has one row each of carrots, radishes, lettuce, beets, spinach, and one row of pansies and pinks. Besides the ten individual gardens there is a big garden in which each gardener has one tomato plant. There is also an observation plot of broom corn, rye, peanuts, and flax.

"Each gardener works in his or her garden Wednesday and Friday noons, under the supervision of Miss Frances I. Brock, a teacher in the school, and also a teacher in the Hartford School of Horticulture on Albany avenue. The gardeners are Helen Mayville, Agnes Jacques, Minnie Cohen, Luke Jacques, Thelma Grant, Joseph Bouchard, Bertha Guerrin, Edward Gunshanan, Alfred Stevenson, and Bertha Cossette. They are receiving much valuable training in nature study and observation of plant life."

BOOKS, PERIODICALS AND REPORTS.

A MANUAL OF ARITHMETIC. By Eliza Kent. Chicago and Boston: Atkinson, Mentzer & Grover. 1908. 16mo, pp. 70. Price, 60 cents.

This is a most admirable manual, in form such that any teacher of ordinary ability and with native interest in Arithmetic teaching can follow and apply. Written by Miss Eliza Kent, for a number of years in charge of the Arithmetic work in the Jacksonville, Illinois, School for the Deaf, the book is virtually the record of the best thought and the best work of a successful teacher of a peculiarly difficult branch of instruction. And as the branch is a difficult one to teach, it is even more a difficult thing to do to tell others how to teach it. It is little enough to say that Miss Kent, having set herself the more difficult task, has accomplished it. The plan of the work is comprehensive, especially in covering all the principles involved, and it is philosophical as beginning with known or obvious things and building thereon the next related and more difficult knowledge. Throughout it seems to be the aim of the author that the pupils shall understand, and that their work shall be evidence of understanding rather than of mere skill and accuracy in the manipulation of figures. The method is especially practical in that it overcomes the various difficulties by anticipating them and leading up to them by easy steps of discovery and understanding in the pupil. With the rest, there are numerous suggestions and ingenious devices fitted to the bringing out of the various principles to make them a matter of perception and of easy mastery. The illustrative apparatus is likewise fitted to the same end, and in the very conveniences that it affords it will guide the teacher upon the lines of the method in its development as being the lines of least resistance. The preface is itself a thesis, and as full of wise suggestions as a nut is of meat. While there are problems given, they are scarcely so much for the pupils as for the teacher, to make plainer to her the lines along which the work must proceed, affording the while patterns for innumerable problems to be made by both pupils and teacher. The fact that the seventy pages of the work cover and provide for seven years of number work indicates the character of the matter as an outline or manual for use by teachers, and in no sense a text-book for use by pupils. It may be foreseen that the work will be particularly useful to teachers isolated in day-schools, or having little supervisory assistance in institutions, they having in either case needs that this book supplies in very full measure. The book can be procured from Miss Kent, whose address is Old Mission, Michigan. Price 60 cents.

A PICTURE PRIMER FOR DEAF CHILDREN. By S. Kutner. London: George Philip & Son, Limited, 32 Fleet St. 16mo, pp. 55. Price 24 cents.

This book, as its name suggests, is designed to give primary material for the earliest instruction of deaf children. The plan of the work is to provide an illustrated vocabulary to cover the most common words in the language, the words being at the same time chosen and arranged with reference to articulation instruction and lip-reading lessons, embracing practically every sound used in speech. Articulation charts are given ingeniously arranged to show the relations of consonant and vowel sounds in English words, under the following chart headings: Chart I: initial sounds—long vowels—final sounds; Chart II: initial sounds—short vowels—final sounds; Chart III: initial sounds—composite final vowels. Both print and script are used, and simple number exercises in addition and subtraction suitable for first year work are given. The book is well printed on excellent paper, and the binding is serviceable. A sequel to this work by the same author is in

preparation, to bear the title, "Classified Picture Vocabulary; a First Language and Reading Book for Deaf Children."

AN ILLUSTRATED VOCABULARY FOR THE USE OF THE DEAF and Dumb. London: Printed for the "Asylum for the Deaf and Dumb," Old Kent Road. Sold at the Asylum, and at the Depositories of the Society for Promoting Christian Knowledge, etc. 1857.

The above is the substance of the title page of a book that possesses unusual interest in the fact that, though compiled with great labor and printed at heavy expense, it was never permitted to be sold or circulated. The editor came across it upon his visit to England last summer, at the Margate School, which, as is well known, is the successor of the Old Kent Road Asylum. The book is a quarto of 469 pages, beautifully printed upon heavy paper, and illustrated by fully 5,000 fine wood cuts, averaging from 8 to 10 on a page, some pages, however, illustrating trades and their tools, having as many as 30 pictures on them. The words illustrated are arranged through the book alphabetically, on the dictionary plan, rendering it a simple matter turning to any word or illustration desired. A book thus designed could not but have fascination for deaf children and be of the greatest utility in the school-room and the query naturally arose in our mind, why has the work never had sale and circulation? The explanation was furnished by Dr. Elliott, and it was to the effect that after the sheets had been all printed a legal process was instituted to stop the publication upon the claim of infringement, it being shown that a number of the pictures, probably a hundred, were copyrighted and that they had been used without legal right. The book up to this point had involved an expenditure of about four thousand pounds ($20,000), and all this, with the enormous labor of its compilation by the Asylum staff, was a loss. While the court ruling required the withdrawal of the work from sale, the sheets were not all destroyed, and some of them have had a unique use, namely, for papering the walls of the study-halls of the school, and thus they have, to no small extent, served their original purpose with the generations of deaf children who have had opportunity to admire and study them. Agreeable to our request, two complete sets of the sheets were sent us by Dr. Elliott, one for the Volta Bureau and the other for our personal library. These have been bound and they make beautiful volumes. Dr. Elliott has offered the suggestion that the Volta Bureau might well undertake the revision and republication of this work for use in English-speaking schools. The suggestion is certainly worthy of consideration. However, should the work ever be undertaken, it could and probably would be so printed as to be useful in German and French, as well as English-speaking schools, by the simple and inexpensive device of printing under each picture the name of it in the three languages in a fixed order.

THE AMERICAN INSTITUTIONS FOR THE EDUCATION OF THE Deaf. By G. Ferreri. Printed by the Pennsylvania Institution for the Deaf and Dumb, Mt. Airy, Philadelphia, and published by the Volta Bureau, Washington. 8vo, pp. 159. Price, $1.25.

As this work in its English translation had its first publication in the pages of the ASSOCIATION REVIEW (see issues from Vol. VI, No. 3, to Vol. IX, No. 5, inclusive), extended review here is not called for and will not be given. It may be said, however, that this republication in book form was made for the use of the Volta Bureau at the instance of its late Superintendent, the Hon. John Hitz, he seeing instantly, upon the appearance of the work in Italian, its great value for English readers of the present and coming generations as a picture of existing conditions, methods, and tendencies in our American Institutions for the Deaf. While Mr. Ferreri has done and is doing a great work as an educator, a thinker, and a writer, it is possible that his "American Institutions" will not be counted as among the least important of his achievements when his own life history comes to be written.

THE TEACHER OF THE DEAF. Woodvale, Bexley, Kent, England. September, 1908.

This number, as was also the July number, is given largely to the discussion of Reading in the education of the Deaf. The series of articles by Mr. A. J. Story upon the specific topic, "Language from Reading, not Reading from Language," is especially able in its thought and clear in its treatment, and we shall hope to reproduce it in some future issue of the REVIEW. The following is the table of contents of the September number: To our Readers; N. A. T. D. Publications Fund; Proposed Teachers' Registration Council; the Margate School Pension Scheme; Donations to Conference Fund; the Place of Reading in the Education of the Deaf, by Susan E. Hull; How to Encourage a Love of Reading, by W. E. Harris; Language from Reading, not Reading from Language, by A. J. Story; Notes on Reading by Deaf Writers; the Joint Education Board Questions; Notes.

THE AMERICAN ANNALS OF THE DEAF. Washington, D. C. September, 1908.

This number of the Annals is occupied almost wholly by the full and most excellent report of the proceedings of the Convention of American Instructors of the Deaf, held at Ogden the past summer, made by Prof. Percival Hull. Beside this the table of contents includes: Notices of Publications; Necrology; School Items; Miscellaneous.

L'EDUCAZIONE DEI SORDOMUTI. Milan. Vol. VI, No. 4.

Contents: Notes on the Vocal Siren of Dr. Marage, by G. Ferreri; Acoustics—Summary of the Teachings of Prof. V. Cozzolino, in the Royal School for Deaf-Mutes in Naples, by Prof. Cozzolino; Rector and Director, by P. Fornari; An Old Question—an open Letter to Prof. Enrice Molfine, by G. Ferreri; Notes and Coments.

NORDISK TIDSKRIFT FOR DOFSTUMSKOLAN. Vanersborg. Nos. 6 and 9, 1908.

Contents: Meeting of the Association of Sweedish Teachers of the Deaf at Vanersborg, June 16-19, 1908, by E. Aurell; What Shall be done to Furnish Employment to the Less Gifted Deaf? by G. Malmer; The Schoo land Home for the Blind Deaf at Vanersborg, by Axel Hirsch; The School for the Deaf at Karlskrona, by Samuel Budde; An Extraordinary Resolution of a Committee, by M.; Notes.

MEETING OF THE DEPARTMENT OF SPECIAL EDUCATION, N. E. A.

CORNELIA D. BINGHAM, CHICAGO, ILL.

The National Education Association met in Cleveland, Ohio, June 29 to July 31, 1908. The Department of Special Education held three sessions, two independent and one in connection with the Department of Child Study.

On Wednesday morning, July 1st, the first meeting was called to order by the President, E. R. Johnstone, Superintendent of the State School for the Feeble-minded, Vineland, New Jersey. The value of the program as shown by its speakers is self-evident, and that it was appreciated was indicated by the attendance of over nine hundred at the opening session. The President addressed the Section upon the topic, "The Function of the Special Class," and he was followed by Jane Addams, of Hull House, Chicago, Ill., on "The Home and the Special Child," and by Earl Barnes, of the American Society for the Extension of University Teaching, Montclair, N. J., on "The Public School and the Special Child." Special phases of the subjects were then treated by Alexander Johnson, Secretary of the National Conference of Charities and Corrections; Mary McCowen, of the Deaf Oral Department, Chicago Normal School; H. H. Goddard, Vineland, N. J., and M. P. Groszmann, Plainfield, N. J.

The problem of meeting the needs of the special child found in every community, whether physically or mentally defective, was discussed along broad educational and ethical lines. The classes which might, through special education, be turned back into the community as wage-earners and factors in civic life, were clearly differentiated from those for whom institutional care was a continuous necessity.

Thursday morning the topic, "The Problem of the Special Class," was presented by Elizabeth E. Farrell, Inspector of Ungraded Classes, Public Schools, New York City, from the standpoint of the care of the backward and mentally deficient classes, and discussed by Mabel Thompson Smart, M. D., Department of Mentally Defective Children, New York City. Almeda Adams, of Cleveland, Ohio, herself blind, gave a very interesting talk on the Education of the Blind Child in the Public Schools with the Seeing, and Gertrude

Van Adestine, Principal of the School for the Deaf, Detroit, Mich., represented the work for the deaf.

A business meeting was held following the program, at which standing committees were appointed and the following officers were elected: Jennie Smith, Eau Claire, Wis., President; Cornelia D. Bingham, Chicago, Ill., Vice-President, and Elizabeth E. Farrell, New York, Secretary.

The next meeting will be held in the summer of 1909, probably in Denver, and all those interested in education should attend, as contact with such a body of educators cannot fail to be an inspiration to progress along any line.

Full Report of the Proceedings of the National Education Association can be secured from Irwin Shepard, Winona, Minn., on payment of $2.00.

THE EIGHTEENTH MEETING OF THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF.

F. W. Booth, Washington, D. C.

In accordance with the published call, the Eighteenth Meeting of the Convention of American Instructors of the Deaf convened at Ogden, Utah, continuing in session from July 4 to July 10. The attendance, on account of the great distance that delegates were compelled to travel to reach Ogden, was not large, scarcely reaching more than 150, yet all who were of this number felt amply repaid, in what was learned and enjoyed in the trip and in the meetings, for all the cost of it to them in time and money.

Space permits us to report only upon the general features of the Convention. To those of our readers desiring more, we would state that quite a full and a very excellent report is given in the current September number of the Annals; and the complete proceedings are soon to have publication and distribution.

The opening session was graced by the attendance of Governor John C. Cutler, Hon. James H. Devine, representing the Mayor of Ogden, and Miss Maud May Babcock, President of the Board of Trustees of the Ogden School, all of whom delivered addresses welcoming the Convention. Addresses in response were made by delegates representing the different sections of the Union and Canada.

Sunday was as usual given to a session devoted to a discussion of Sunday exercises in the various schools, a discussion, it should be said, that was unusually interesting and practical.

The days following were well filled with the usual sessions, with formal papers read and discussed, covering practically the entire field of our work. While all the papers were thoughtful and well prepared, several were especially able, among the best indeed we recall having heard in all the years of our attendance upon our professional meetings. We would thus class Mr. Tillinghast's paper on "What is Failure in Oral Instruction?", Mr. Mulligan's paper on "The Backward and Feeble-Minded Deaf," and Mr. Forrester's paper on "Less Text-Book; More Teacher," and we would recommend careful reading of these papers in the published proceedings by all who did not hear them.

The morning period of each day from 8:15 to 9 o'clock was given to an exhibition of school work illustrated with classes of the Ogden School of the primary, intermediate, and advanced grades. This work was all most creditable, and the fact that the class-rooms were

crowded daily by interested teachers wishing to study it attested its practical worth. The popularity and the very practical value of these exhibitions of real school work in the presence of experienced and discerning teachers have been well demonstrated, first at Northampton, then at Morganton, again at Edgewood Park, and now at Ogden, and they should and no doubt will be made henceforth a permanent feature of our professional meetings.

The arrangements for recreation and social enjoyment were well planned and admirably carried out. Superintendent Driggs and his staff had arranged for excursions taking the Convention to all the chief points of interest in and about Ogden and Salt Lake City, and thus there were enjoyed rides up a typical Rocky Mountain canyon, attendance upon services, with preaching and musicals, at the Ogden and Salt Lake City tabernacles, a trip out to Great Salt Lake, with a bath in its buoyant waters, and a visit to the young, yet extensive, University of Utah. The evenings were likewise fully and pleasantly occupied with receptions, concerts, and dancing.

The continuous attendance upon the services by the President of the Board of Trustees of the Utah School, Miss Maud May Babcock, and her active participation in the discussions, not only evidenced her interest in the work and her insight into the problems of deaf education, but suggested also the important part that she has played in bringing the Utah School to its present condition of excellence in its work and of progressiveness in its tendencies.

The well constructed and well planned buildings and the beautiful grounds of the Utah School are little short of ideal in their adaptations to the purposes of a home and a school for deaf and blind children, and they stand an irrefutable evidence of the broad philanthropy and the far-seeing wisdom guiding the educational policies of one of the youngest of our western States.

This Convention we believe is the first since 1870 of which Dr. Gallaudet has not been a member and a leading participant in the proceedings. Ill health and the risk attending the making of the long railway journey to Ogden were accepted as sufficient reasons for his absence. A most graceful act of the Convention was his reelection to the office of President, notwithstanding his request that his name be not considered for the position.

The presentation to Mrs. Driggs at the close of the Convention of a beautiful library lamp by the members attested their appreciation of her attentions and efforts to make the meeting enjoyable in every way.

The following resolution, after more or less discussion in earlier sessions, of the subject covered by it, was presented by Mr. W. L. Walker at the closing session:

WHEREAS: Believing that the time has come for the crystallization of a sentiment existing generally in the minds of the educators of the deaf, and

WHEREAS: Believing that this crystallization will work for a great uplifting of our pupils, and

WHEREAS: There is a plain duty upon us to make our graduates as nearly normal as possible, and

WHEREAS: We believe this can best be done by making their medium of thought the English language; therefore be it

Resolved, by the Ogden Convention now assembled: That the English language be made the sole medium of communication in the graded schoolroom by authority, if necessary; outside of the schoolroom by sentiment.

The resolution was declared by the Chair out of order, as contrary to the fourth section of Article II of the Constitution, which reads as follows:

Fourth. As an association to stand committed to no particular theory, method or system, and adopting as its guide the following motto: "Any method for good results; all methods, and wedded to none."

Invitations for the next Convention, to be held three years hence, were extended by the Wisconsin, the Oklahoma, and the Ontario schools, but no vote was taken upon the question of acceptance, that being left for action by the executive committee of the Convention.

THE MELVILLE BELL MEMORIAL DEPARTMENT.

QUERIES.

To ascertain, if possible, whether others would endorse statements made by Mrs. Bell in the June REVIEW,[1] application was made to Mrs. Weeden, of Providence, R. I., and Mr. A. L. Fechheimer, of Cincinnati, O., both preeminent as speech readers and speakers.

They were asked, in effect: Do you also meet with the difficulties specified, in determining the correct pronunciation to be given characters like *wh, th, s,* etc., possessing different sounds, which are not clearly indicated in print or on the lips?

They were not asked about the Melville Bell symbols, it being known that neither Mrs. Weeden nor Mr. Fechheimer were familiar with them; but it was hoped that the replies might be of such nature as to afford some clue to the benefit which use of the symbols should be in parallel cases.

Unfortunately, neither Mrs. Weeden nor Mr. Fechheimer had seen the paper referred to, so their replies are not specific. This is especially regrettable in Mrs. Weeden's case, for, while declaring her inability to write on the subject, she says: "I feel sure I can endorse every word she has said, and that I have probably had most, if not all, the difficulties she mentions, and many more."

Following is Mr. Fechheimer's letter:

LETTER FROM A. LINCOLN FECHHEIMER.

"I will try to describe, as far as I can, my experiences concerning correct pronunciation of words, where not clearly indicated, either in print, or on the lips. I do not feel that I have been greatly hampered by the fact that various letters are pronounced in various ways, even if their relative positions to other letters or sounds re-

[1] "What the Melville Bell Symbols Mean to Me," Mrs. Alexander Graham Bell, ASSOCIATION REVIEW, June, 1908, vol. X, No. 3, pp. 308-311.

main the same. I am unable to account for this, unless it be that I depend to a very great extent upon my instinct in determining upon the correct pronunciation of the letter in question. When in doubt, I often say the word to myself, pronouncing it in various ways, and am thus guided in my decision by intuition only. I find I am usually correct in reaching my conclusions as to the proper pronunciation. For instance, were I in doubt as to whether or not *th* is hard or soft in "breathing," upon saying it to myself, the soft *th* conveys an impression of a queer and an impossible sound to me. Of course I make mistakes occasionally, but that usually occurs in words not generally used, as "vacuum," for example. I find the letter *s* gives me more trouble than any other letter.

"I know this is not an infallible system of deciding upon the correct pronunciation, and consequently I am afraid it will not be very satisfactory to you, or to those interested in the deaf. But as repeated before, I have found it to be of the greatest service and value to me."

This is a letter of unusual interest.

It is a personal record of the system used by a remarkably successful speaker and speech reader, deaf from birth.

It unconsciously brings out in a very striking manner the difficulty necessarily encountered by everyone in trying to give an unambiguous definition in describing sounds, when aided by some exact method such as the symbols present.

In the one specific example Mr. Fechheimer quotes, he writes, "Were I in doubt as to whether or not *th* is hard or soft in 'breathing,' upon saying it to myself the soft *th* conveys an impression of a queer and an impossible sound to me."

Now what does Mr. Fechheimer mean by "soft" *th?* The Editor was in doubt, but with several unprofessional friends concluded that "soft" should mean a voiceless breath, as that was certainly a softer sound.

Reference to Webster's Unabridged, however, yielded: "*Th,* soft, flat, or vocal, as in *thine, mother,* etc." Continued search showed that the *th* in "breathing" was of the "soft or vocal" variety.

Escape, therefore, is impossible from the conclusion that Mr. Fechheimer either supposed that "soft" meant "non-vocal," as seems natural, in which case he has laid himself open to serious misinterpretation, or his instinct has in this instance played him false, and his "queer and impossible sound" is really the correct one.

Either way, familiarity with the symbols would thus have been of value to him—in the first case, by enabling him to make himself

clearly understood; in the other, by avoiding the mistake in pronunciation.

It would seem, therefore, that Mr. Fechheimer's testimony is—if indirectly, yet as far as it goes—emphatic regarding the value to speakers, even of the most advanced grades, of familiarity with some such precise phonetic system as the Melville Bell symbols.

M. G.

To THE EDITOR: Have you in stock, or can you tell me how and where I can get, a book of Japanese in Visible Speech? I would like very much some German Visible Speech, and I would thank you if you would tell me if that is obtainable. L. A.

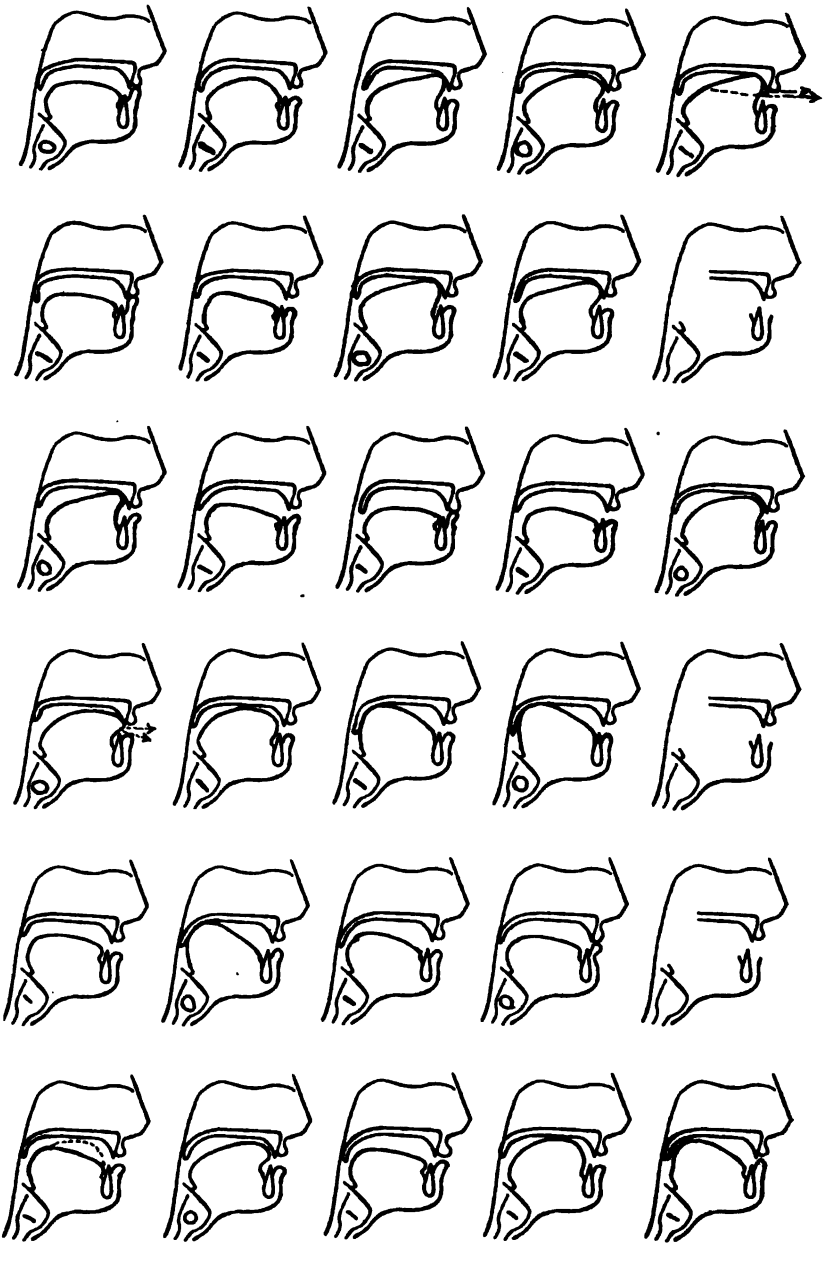
We know of no book of Japanese in Visible Speech such as is probably desired. However, it may be said, in recent years Visible Speech has been under investigation in Japanese educational circles to determine if it might not be fitted to meet the need that exists in Japan for a phonetic alphabet to take the place of the arbitrary and cumbersome Chinese characters now in use. Pamphlets have been published, of which copies are in the Volta Bureau, in which Visible Speech symbols are extensively employed in conjunction with the Japanese-Chinese print, with it in view no doubt to show the nature of the symbols and to illustrate their utility and adaptability for the purposes of a scientific alphabet such as is needed.

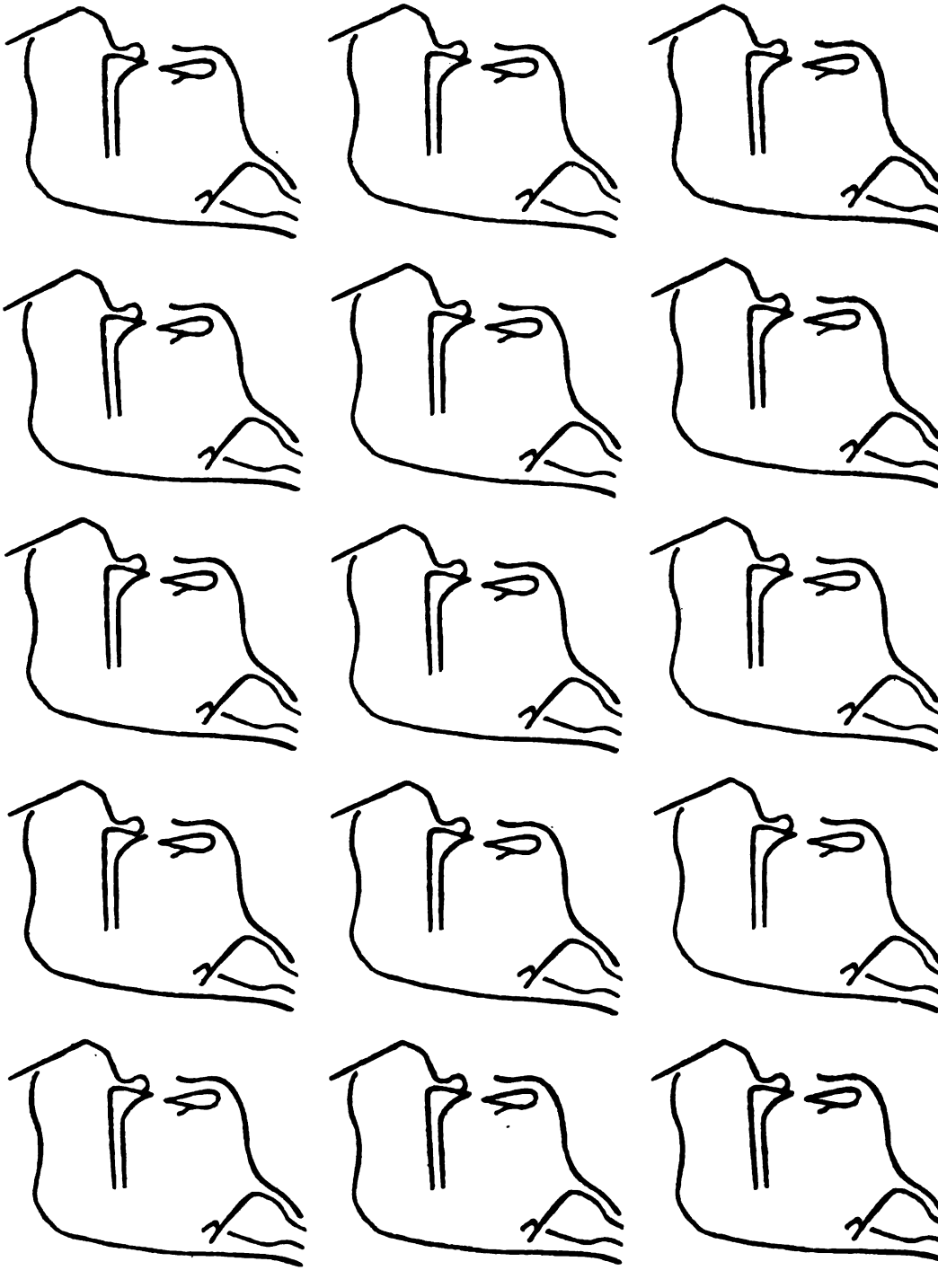
The Volta Bureau has Melville Bell's "Visible Speech in Twelve Lessons" in German, and also in Italian, which it will furnish upon application.

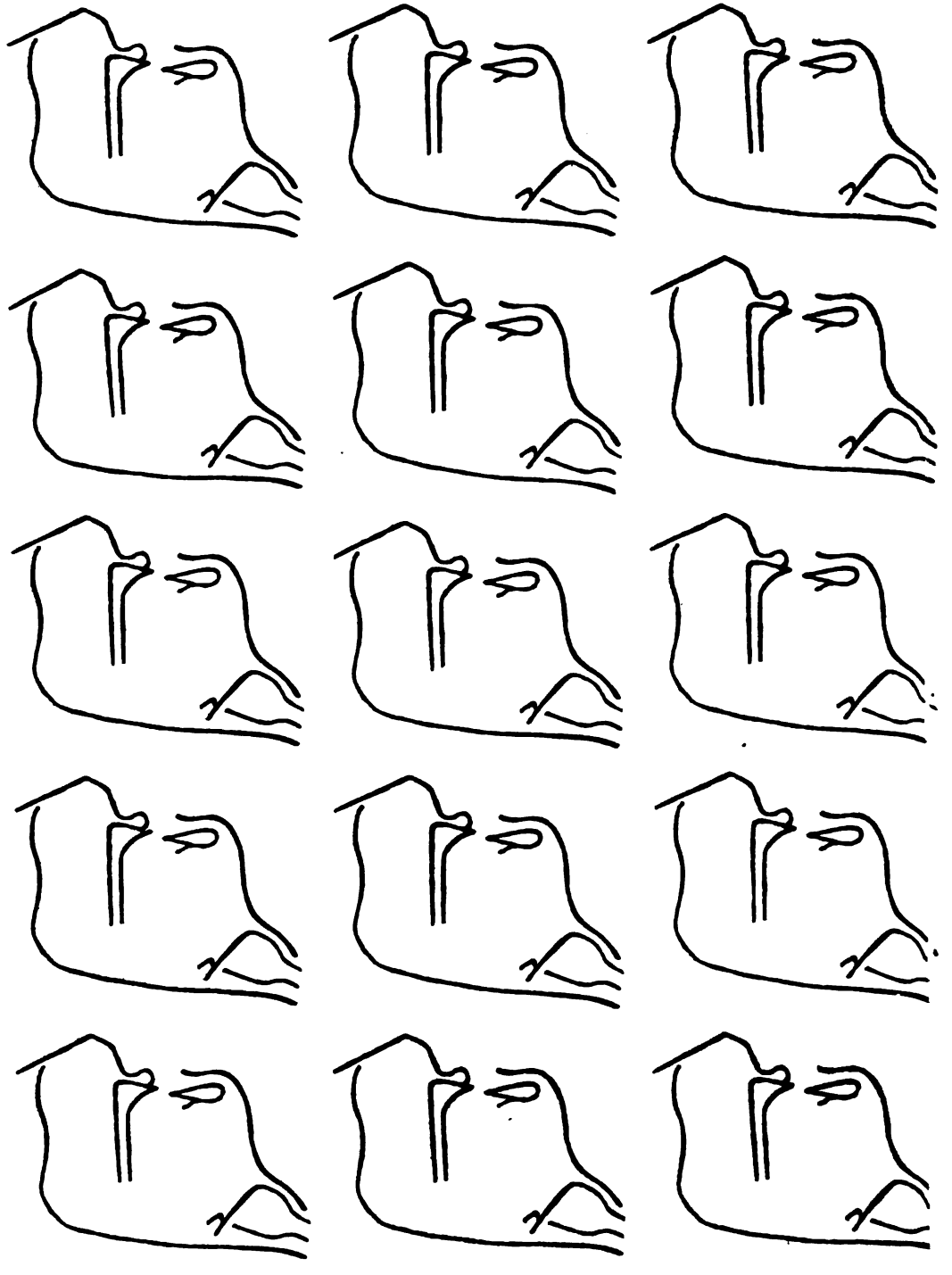
DIAGRAM READING.

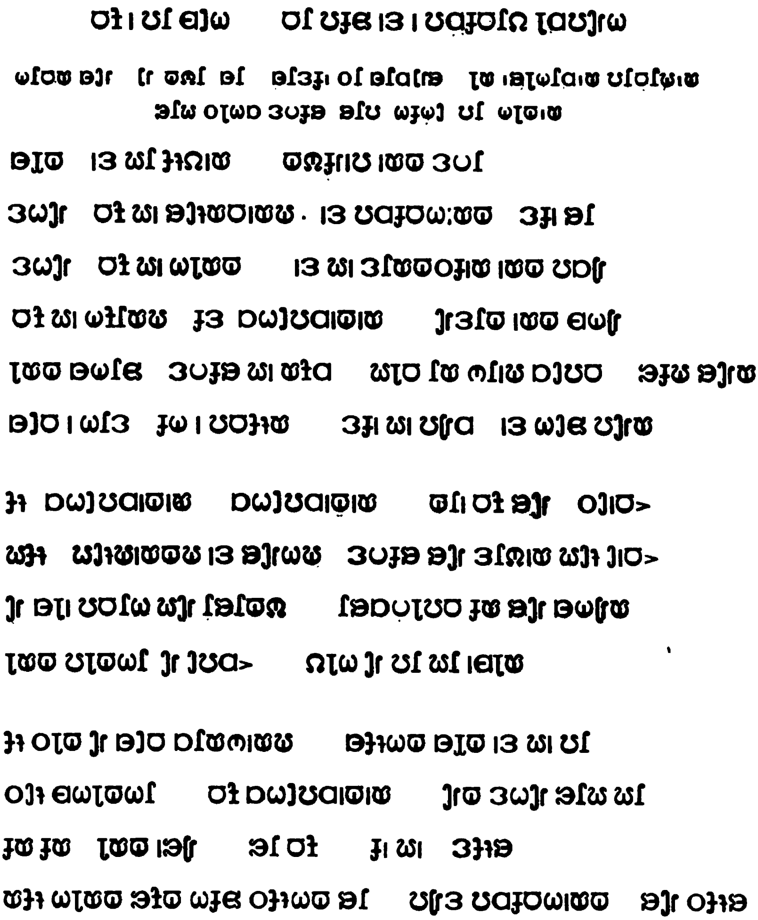
Some months ago Miss Kate D. Williams of Boston suggested that it might be helpful and stimulating to print a set of small charts representing the positions assumed by the vocal organs in pronouncing sounds, the series as a whole to constitute a complete word. No symbols were to accompany the charts, which would thus form a sort of puzzle to be worked out by our readers and by deaf pupils in the schools.

The suggestion seemed a capital one, and on the next page we present our first set. We hope to follow this set with others in subsequent issues. Meanwhile, we print two pages of blank forms. These forms are printed on perforated sheets so they can be detached for school-room work. M. G.





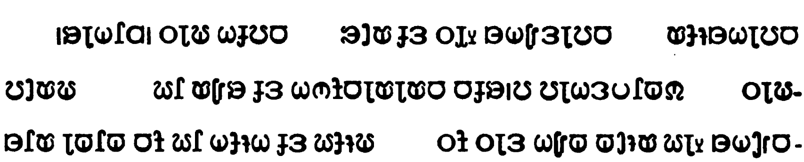




CORRESPONDENCE.

[The Editor welcomes communications in the symbols, particularly when on timely topics, but is not responsible for their use in letters from correspondents.]

LIEUTENANT THOMAS E. SELFRIDGE, SEPTEMBER 17, 1908.



B. M.

Fig. 1.

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ate
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at am jm ona ajmi ama ajo ama ajoata ase ajmajefujo ase ajmajefujo ase ajmajefujo
-ase ajm mete jm ouoto ama ato ona ajoata ajmajefujo
-ase ajm mete jm ouoto ama ato ona ajoata ajmajefujo

ato ase ajm mete jm ouoto ama ato ona ajoata ajmajefujo ase ajm mete jm ouoto ama
-ajm ef ate ajm jo ama ato ona ajoata ajmajefujo ase ajm mete jm ouoto ama ato ona

of the Association and to the Executive Committee of the Association, and shall perform such other duties as may be assigned to him by the Executive Committee.

ARTICLE VI.

The Executive Committee shall consist of the President, Secretary, Treasurer, and Editor of the Association, and of three members elected by the Association at each annual meeting. The Executive Committee shall have charge of the general interests of the Association, and shall have power to fill vacancies occurring in its own body or in any office of the Association, and to appoint such committees as may be necessary to carry on the work of the Association.

ARTICLE VII.

The Association shall hold an annual meeting at such time and place as may be designated by the Executive Committee. Special meetings may be called by the Executive Committee, or by the President upon the written request of twenty members.

ARTICLE VIII.

Any person may become a member of the Association upon the payment of the annual dues, which shall be two dollars. Any person may become a life member upon the payment of twenty dollars. Members in arrears for dues shall not be entitled to vote or to receive the publications of the Association.

ARTICLE IX.

This Constitution may be amended by a two-thirds vote of the members present at any annual meeting, provided that the proposed amendment shall have been submitted in writing to the Executive Committee at least one month before the meeting.

EDITORIAL COMMENT.

THE SUMMER SCHOOLS.

The summer schools at Northampton and Boston held their usual sessions the past summer. The good attendance at these schools and the uniform testimony by teachers taking the course of their practical character and high value, raise the hope that the work at large will begin soon to show very material improvement, not only from the employment of better and more effective methods, but from the spread of broader and clearer views of the possibilities of deaf education when prosecuted under favorable conditions and in accordance with sound educational principles. The Northampton class, held during the month of June, consisted of twenty-one members, representing twelve schools, and included the following named persons: Amy M. Burke, Thomas Rodwell, Belleville, Ontario; Priscilla A. Fuller, Mystic, Conn.; Urania Sturdevant, Providence, R. I.; Florence Ritchey, Malone, N. Y.; Mary D. Cason, Elizabeth Sturdevant, Staunton, Va.; Daisy Davis, Mary P. Gartrelle, Ethele Richards, Morganton, N. C.; Lucie Dumon, Charlotte Willits, Detroit, Mich.; Harris Taylor, Danville, Ky.; Amanda Davis, Frances Ferguson, Little Rock, Ark.; Martha M. Hill, Grand Rapids, Mich.; Julia R. Bateman, Faribault, Minn.; E. Emma Raymond, Ollie Peterson, Florence Warner, Austin, Texas; Grace Wright, Columbus, Ohio.

The class in charge of Mrs. Sarah Jordan Monro was held in Boston during the month of July. A goodly number of enthusiastic teachers took the course of instruction, among them being five women now assisting in the work of the new day school for the deaf just opened in New York City. Three teachers came from the institution in Oklahoma, and returned with added zeal for making the teaching of speech an important part of their work. Other members of the class came from the South and from New England. Special attention was given to the study of the mechanism of speech with the Bell Visible Speech Symbols; also to rhythm and harmonic gymnastics as aids in the teaching of speech and the training of the voice. Pupils from the Horace Mann School were brought in from time to time to show the different steps in the work. Among

the lectures by specialists were some practical talks upon the ear and causes of deafness, by Dr. Clarence John Blake, of Boston.

THE NORTHAMPTON NORMAL CLASS.

The present Normal Class at Northampton, taking the regular course of a year, consists of the following named students: Catherine Allison, of Northampton, Mass.; Pauline B. Camp, of Warren, Ark.; C. Claire Gipson, of Upper Sandusky, Ohio; Marcia Heath, of Grand Rapids, Mich.; Horace G. Hilton, of New York City; Helen Hubbert, of Philadelphia, Penna.; Mrs. S. M. Moore, of St. Augustine, Fla.; Galene Philadelpheus, of Marsavan, Turkey; Iva M. Roberts, of Pittsburg, Penna.; Lavilla Ward, of Lincolntown, Ga.; Agnes Ward, of Lincolntown, Ga.

In this connection we would say that we shall be pleased to receive from the schools at any time names of Normal students pursuing regular courses covering a year or more of time, and print them for the benefit of superintendents who may wish to employ trained teachers.

A SCHOOL FOR THE SEMI-DEAF AND SEMI-MUTE STARTED IN GLASGOW.

A personal note to the editor from Dr. James Kerr Love, dated July 3, gives the interesting information that a school for the semi-deaf and semi-mute was to start in Glasgow, in August. Dr. Love says of it: "The work is to a certain extent experimental, though I hardly fear failure. Still we must let works precede words." We shall be glad to hear more of this experiment and the results flowing from it later.

THE RAINDROP.

Letters of inquiry are being received regarding the proposed republication of the "Raindrop." For general information we would report that nearly enough subscriptions have been received to justify we think taking up the work, but as final decision in the matter rests necessarily with the Board of Directors of the Association, further proceedings must wait their action at their next meeting, which takes place in December. In the meantime additional subscriptions will be welcomed. The book complete will contain approximately 400 large size pages, and will be sold at $1.50 per copy.

METHODS OF TEACHING THE DEAF.

It is a matter of no small significance, and one for gratulation, that the high educational officials of the great state of New York have taken the problem of deaf education in hand, with the evident purpose of making it a subject of inquiry, comparison, and study such as will bring them to a plane of familiarity with it and knowledge of it whereby they may be able to direct the work of the deaf schools in their charge upon the most effective lines looking to attainable and desirable results in the education of deaf children. We have in the symposium below the result of the most recent action of the State Education Department of New York, which action was an inquiry directed to the principals of the three schools of the state which probably most distinctly typify, in the methods they severally pursue, the methods in general use in the schools for the deaf throughout the country. The inquiry seeks to bring out a succinct and clear statement of the advantages of the several methods, each in comparison with the others, and to place them in contrast for the information of the public and for the guidance of all personally interested and concerned. The claimed advantages are in each case most clearly set forth, and they may well be adopted by the profession at large for bringing discussion to a common ground of accepted definition. It would be well, in this day of earnest seeking by parents for that which is best and most serviceable in the way of education for their children, if the parents of the deaf children, not only of New York state but of every state in the Union, could have this statement of the claimed advantages of the various methods for their information and guidance. The introduction to the symposium, from the pen of Dr. A. C. Hill, of the Inspections Division of the New York State Education Department, shows that the parents of deaf children of New York state are hereafter to have this information to aid them in making intelligent choice of the kind of school which they wish their children to attend. The symposium follows:

A Symposium.

There are three distinct methods of instructing the deaf used in the schools of the state of New York. It is desirable that this fact should be generally known by parents and others interested in the education of this class of pupils.

There is no general agreement as to which method is best and the advocates of each very vigorously insist that their way is the right one. It is highly probable that the methods employed are not

all alike good, and it may well be that one method is preferable for one class of pupils and another for another. In any case it is well for parents to know that schools for the deaf differ radically from one another and that choice should be made with this fact in view.

To inform the public on the subject, a brief characterization of each method, with reasons for its use, is given below. The writer in each case is a prominent advocate of the method he describes and defends.—[A. C. HILL.]

THE COMBINED OR ECLECTIC METHOD.

In the term, deaf-mute, are included four widely differing sub-classes, the semi-deaf, the semi-mute, the congenital deaf with ability to perceive sound, and the totally deaf congenital unable to perceive sound.

The diverse fundamental needs of these four sub-classes compels the use of the combined or eclectic system so-called.

The system recognizes the dissimilarity of its subjects, insists on speech and the understanding of speech signs by such only as can be best advanced thereby, employs manual spelling and writing for those who from any mental or physical condition cannot develop profitable speech or an ability to read lip signs, develops the dormant auditory apparatus for enlightenment and enjoyment whenever possible, and permits and encourages gesture and pantomime when the English vocabulary is not sufficient, rather than repress the expression of thought until the proper English equivalent is acquired.

The advantages of this system are:

1. It considers the condition, necessities, and practicable possibilities of the individual and invokes the aid of every known means or method to lead from ignorance.

2. It has enabled 96 per cent. of the graduates of the New York Institution for the Instruction of the Deaf and Dumb to become self-supporting men and women.

3. It has developed the leaders, who, today, in the City of New York, are the promoters, directors, and conductors of religious activity, fraternal organization, and social enjoyment among the deaf.—[ENOCH HENRY CURRIER, Principal of the N. Y. Institution for the Instruction of the Deaf and Dumb, New York City.]

THE MANUAL ALPHABET METHOD.

The feature that especially characterizes this method of communication with and between the deaf pupils of the school, is its use of manuals for writing words in the air as they are spoken.

It does not employ the sign language of the combined method.

It differs from the pure oral method in that while communication must be through speech and speech-reading, whenever the speaker wishes he accompanies his speech with finger spelling.

Some reasons for following this method are:

1. It results in a quick understanding of language and acquirement of vocabulary.

2. It gives the deaf assurance, in speaking to one another, that they will be understood without repetitions.

3. It enables classes to make regular grade advancement from year to year, and to acquire a greater range of knowledge in a given time than they otherwise could.

4. The use of manuals does not retard the acquirement of habits of speaking or reading speech, but promotes both.

5. It is a help to those who, because of defective sight or other reason, would find it difficult to keep up to grade by unaided speech reading.—[Z. F. WESTERVELT, Superintendent, Western New York Institution for Deaf Mutes, Rochester, N. Y.]

THE ORAL METHOD.

In the Lexington Avenue School we interpret the oral method to mean—a systematic course of instruction developed and applied along scientific and pedagogical lines having as its chief aim the mental development of the deaf child by means of speech, speech-reading, and writing.

Mental development is the goal. The power to converse orally with those who can hear and speak and the speech-reading are means to that end. Writing is a very great aid, signs a serious detriment, and the manual alphabet a hindrance to the successful and complete development of the oral method.

Speech and speech-reading, writing, reading, object and picture work, a judicious use of good text books, a systematic arrangement of subjects and materials, and a careful presentation of these by well trained and experienced teachers constitute the most modern method of teaching deaf children and most nearly approximate the instruction of hearing children.

The advantages of teaching a deaf child by the oral method are:

1. It brings the child nearer to the normal.

2. It assists the child in its daily intercourse with the world.

3. The efforts to speak and to read the lips are mental and physical exercises which, if well directed and properly executed, stimulate the mind and produce a broader mental development.

4. Deaf children, through the correct application of proper oral methods, receive as liberal an education as by any other method, and, everything being considered, a broader development.—[E. A. GRUVER, Principal, Institution for the Improved Instruction of Deaf Mutes, New York City.]

Copies of "The Mechanism of Speech," by Alexander Graham Bell (second edition, with Synopsis and Index added), on sale at $1.20 per copy. Address orders to F. W. Booth, General Secretary, 1525 35th St., N. W., Washington, D. C.

NEW SCHOOLS.

The new school year opens with five new schools started in different sections of the country, namely, in Pittsburgh, New York City, Lake Linden, Mich., Madison, Wis., and Kensington, Md.

The Pittsburgh school is a boarding school, and is under the direction of the order of the Sisters of Charity. The school, to be known as the Pittsburgh School for Deaf Mutes, opened on September 7, in a rented building, at 1613 Lowrie street, North Side, Pittsburgh, starting with an attendance of five pupils, with prospect of increase as the year progresses. The staff consists of Sister Mary Cecelia, principal, and two assistant teachers. It is regrettable that the name of the school contains the objectionable and rapidly becoming obsolete term "Mutes."

The New York City school is a day school, and is located at 225 Twenty-third street. The following note from the principal, Miss Margaret A. Regan, gives interesting details of the opening: "On September 14 we opened the day school, although the building is still undergoing repairs, and is far from being in a satisfactory condition. A number of our pupils are beginners, many are deaf children who have formerly been accommodated in the ungraded classes in the public schools, and a few have come from the institutions. The first week we registered seventy-five, and more are now coming in. We have organized ten classes, with the following corps of teachers: Misses Ellen McGrath, Lizzie Donohoe, Kathryn Shelley, Hannah C. Wells, Estelle F. Cullen, Loretta Dwyer, Mary Duncan, Helen M. Reilly, Harriet A. Calahan, Mary B. Shaw. Of course the school is to be an Oral school, and I believe it will be a good school, as pupils, teachers, and parents are all deeply interested in the work, and a splendid spirit is shown. We are admitting children from all boroughs of the city and many are coming great distances, and have to be accompanied by their parents, who bring them in the morning and call for them in the afternoon. We shall not have our formal opening of the school until the workmen have left the building."

The school at Madison, Wis., adds another day-school to the Wisconsin system. It opened September 1, in the Doty school building, Miss Matild Flatley, trained at the Milwaukee school, in charge. The school started with five children enrolled, with prospects that there will be several more before the middle of the year.

The Kensington, Md., school will have the title of "Home for Little Deaf Children," and it will be conducted after the method of the Bala school in Philadelphia, the teacher in charge, Miss Anna C. Reinhardt, having been trained by Miss Garrett and having taught under her a number of years. Kensington is virtually a suburb of Washington, it being but eleven miles out, with direct trolley and train connections.

The school at Lake Linden, Mich., is also a day-school, and is in charge of Miss Duggan as teacher.

THE DEAF AND THE CIVIL SERVICE.

The president of the National Association of the Deaf, in his official capacity, is continuing his efforts to secure a reversal of the late ruling barring the deaf from the examinations for positions in the civil service. In order to know their views upon the matter before election, and if possible to commit them to favorable action after election, he has addressed inquiries to the two leading candidates for President, Mr. Bryan and Mr. Taft, as to what would be, in case of election, their attitude upon the question, with the following result:

Mr. Bryan replied:

"While I have made it a rule not to discuss questions outside my platform, and can not, therefore, attempt to make promises in regard to questions that will come before me if elected, I beg to say that I do not understand why deafness should be regarded as a conclusive bar to employment when there are so many kinds of work which a deaf person can do. If I am elected I shall be in a position to construe the question upon its merits and to decide it in harmony with the spirit of our platform, which demands justice for all."

Mr. Taft replied:

"If there are places in the government in which persons totally deaf can discharge the duties, I should favor regulations permitting them to compete for such places."

There seems to be little difference in these replies, both being in the extreme favorable in spirit, and equally committal and binding in the letter, so that the prospect is that whichever candidate is elected, whether he be Mr. Bryan or Mr. Taft, the obnoxious rule that now keeps the deaf from entering the government service will be abrogated.

A letter to the editor from Madam de Madrazo, principal of the National Institution for the Deaf at Buenos Aires, Argentine Republic, gives information that the course in "Ortofonia," estab-

lished in 1905, has been so far successful that a decree of the Minister of Public Instruction of the country has been issued declaring that all public school children with speech in any degree defective, shall be admitted into the school and given the benefits of the training there provided.

A FOREIGN VISITOR.

The Volta Bureau was recently honored by a visit from Mr. Joseph Schara, a teacher in the Public School for the Deaf in Vienna. Mr. Schara is in this country on a year's leave of absence from his post, and during his stay he expects to visit for purposes of observation and study a number of our American schools, among them those in Washington, Philadelphia, New York City, Buffalo, Rochester, Hartford, Northampton, and Boston. He has already visited Gallaudet College and Kendall School, and Miss Rheinhardt's school, in Kensington, Md. Before coming to America, Mr. Schara had engaged himself to undertake the instruction of a private pupil in Philadelphia, and his time during his stay in America will be occupied chiefly with this work. While an all-round teacher of some sixteen years' experience, Mr. Schara makes a specialty of articulation work, and he will give this feature in our schools particular attention while on his visits.

SUPERVISING TEACHERS APPOINTED.

The vacancy in the position of supervising teacher in the Illinois School at Jacksonville, occasioned by the retirement of Miss Morse, has been filled by the appointment of Miss S. Frances Wood to the place, for many years a successful teacher in the school.

In the Ohio School the position of head of the Oral department, formerly occupied by Mrs. Mansur, has been filled by the appointment of Miss Grace L. Wright, a teacher for some years in the Northampton and Mt. Airy schools.

In the Montana School the position of head teacher has been created, and Mr. T. C. Forrester, trained in the Glasgow School under Dr. Addison, has been appointed to fill it.

A new edition of the work on "Formation and Development of Elementary English Sounds," by Caroline A. Yale, has been published by the Association, and it can now be supplied upon application to the General Secretary. Price for single copies, 25 cents; five copies, $1.00.

NEW SUPERINTENDENTS.

Two schools start the fall term with new Superintendents, namely, the Louisiana School at Baton Rouge, and the Oklahoma School, formerly at Guthrie, now at Sulphur. In the former school, Colonel S. M. Robertson, for many years a member of Congress, takes the place of Mr. S. T. Walker, who retires on account of ill-health; in the latter, Mr. A. A. Stewart, formerly Superintendent of the Kansas School, takes the place of Mr. R. N. Dunham.

RETIRING TEACHERS.

The new school year opens with a number of vacant places in the ranks of our workers occasioned by voluntary retirement from active service. In cases, such retirement is occasioned by ill health; in other cases, by advanced years, and in still others, by the desire of change to occupations less exacting and taxing than that of teaching. These are all good reasons, and honorable, and teachers retiring because of them quite invariably carry with them the highest respect of their professional co-workers. The list this year is unusually long of teachers retiring from the work, and it includes a number of the ablest and best known in the profession, among them Miss Morse and Miss Kent of the Illinois School, Miss Witter and Miss Field of the Northampton School, Miss Grace Taft and Misses Mabel and Carrie Haynes of the North Carolina School, Mr. S. T. Walker of the Louisiana School, and Mr. R. E. Stewart and Mr. Hiram Phillips of the Iowa School.

In the retirement of Miss Morse and Miss Kent the Illinois School undoubtedly sustains a severe loss. The following account and estimate of their work in connection with the school, taken from the Illinois Advance, will, we feel sure, be of interest to their many friends among our readers. Our acknowledgments are due to Mr. W. H. Clifford, editor of the Advance, for the use of the illustration accompanying the article:

"Miss Anna Morse and Miss Eliza Kent have tendered their resignations as head teacher and supervising teacher of arithmetic, respectively, at our school and will retire from the faculty at the close of school, June 11th.

"The news of their resignations will perhaps come as a surprise to many of our readers, but most of our institution people have known for some time that such a step was contemplated. For the last two years they have been considering the plan of retiring to take

up their residence in Michigan, where they have a beautiful country place called 'Bittersweet,' on Old Mission peninsula. For a number of years they have been spending their vacations there, and now expect to make their home among the fragrant pines and firs of that delightful clime, enjoying a well-earned rest from the arduous duties of teaching.

" 'Bittersweet' is a beautiful place, containing everything found on an ideal country estate. Surrounded by magnificent trees, it is located on a terrace overlooking Grand Traverse Bay and has a superb water view for miles in three directions. It has one of the largest and best producing apple orchards on the peninsula, and a

ANNA MORSE.

nearby farm which they recently purchased has a large orchard of cherry trees of the very best varieties. One could hardly wish for a more delightful place to live.

"Miss Morse is a native of the State of New York. She graduated in June, 1869, from Tilden Seminary, West Lebanon, New Hampshire, and came west shortly afterward. She began to teach the deaf in the fall of that year. She was unacquainted with the deaf, and the following incident led to her taking up the work which she has so successfully carried on for many years. While riding on a train one day her father happened to meet Dr. Noyes, superintendent of the Minnesota School for the Deaf. Being acquainted, they fell into conversation. Dr. Noyes remarked that his school would shortly open and lamented the fact that an expected

teacher had disappointed him; he said he needed a teacher badly and wondered where he could get one. Dr. Morse replied, half jokingly, that his daughter, who was just out of school and who had recently joined him in St. Paul, might teach for him. Dr. Noyes took the suggestion seriously and accepted an invitation to dine with them the next day. He was so pleased with Miss Morse that he persuaded her to come to Faribault and see the school with a view of accepting a position as teacher. This she did and remained there two years.

"In 1871 Miss Morse came to the Illinois School. She did not know anyone in Jacksonville, having secured her position through correspondence with Dr. Gillett. School did not begin that year until December, as the opening had been postponed on account of the delay in completing the south wing of the main building, which was under course of construction.

"Between twenty and thirty boys were assigned to Miss Morse's class for the first week, but later they were transferred to other classes and she was given a third year class. She has taught every grade in school and in 1893, when the position of head teacher was created, she was selected for the place and has filled it with dignity and distinction from that time to the present.

"To speak of Miss Morse's work here, where she has just rounded out thirty-seven years of faithful, unselfish, untiring labor among the deaf, and to properly estimate the results she has attained, is a hard task. It is not enough to say that she has been successful, for she has been more than that. Hundreds of pupils have come under her direction, been influenced by her wise counsel, and have gone out into life filled with a high purpose and a resolve to do noble things. Her force of character has had its uplifting influence over a score of teachers who have come under her observation, and many a young teacher has been guided safely through the trials of a beginner's work and helped to see the bright side when about to give up in despair.

"Miss Morse's service to the cause of the deaf has been beautiful and its results far-reaching, more so than any words of ours can express.

"Miss Kent was educated at Illinois Woman's College and taught for a number of years in the public schools of Jacksonville. She was made City Superintendent of Schools and held that position very acceptably for a number of years. She resigned in 1888 to take up the work of teaching the deaf in our school, where she has taught successfully since that time. For the last six years she has been supervising teacher of arithmetic. Miss Kent is considered an authority on arithmetic teaching and has in press a manual for use of teachers in schools for the deaf. Her work is well known and has been favorably commented on by the authorities of other schools for the deaf. She has kept in close touch with many of her former pupils and has been a great help to them in getting on in the world.

"Miss Morse and Miss Kent are members of Jacksonville's most select social set and belong to the leading literary and philanthropic

clubs of the city: the Woman's Club, D. A. R., and Sorosis, which is, by the way, the second oldest literary society for women in the country. They are active in the affairs of these organizations and will be greatly missed.

"Their removal from the city will be a distinct loss to our school and to the community. While we regret their going we assure them that they have the hearty good will of all connected with the institution—pupils, officers, teachers and superintendent—who will ever hold them in loving remembrance."

To the above list of notable retirements should be added the names of Dr. Richard Elliott and Mr. J. P. Barrett, of the Margate, England, School, who have been for fifty years associates in the work, the former as Headmaster and the latter as under teacher. A worthy tribute to these veterans, from the pen of Mr. J. A. Weaver, a former teacher in the Margate School, is taken from the Mt. Airy World:

"Dr. Richard Elliott, one of the most prominent teachers of the deaf in the British Isles, and one whose name is familiar to members of our profession on this side of the Atlantic, has announced his intention of retiring at the end of the present year. Dr. Elliott's connection with the school, which is the largest and oldest in the British Isles, extends over a period of more than fifty years, and in retiring from the profession he leaves a long record of faithful and devoted service in the cause of the education of the deaf. When Dr. Elliott first took charge of the school, the teaching of speech and lip reading had practically disappeared. In 1881 Dr. Elliott introduced the oral system, beginning on a small scale with about forty pupils and training his own teachers. Notwithstanding the difficulties which had to be overcome at that time, after a few years' trial Dr. Elliott demonstrated beyond all doubt the possibilities of oral teaching, with the result that this method was permanently adopted in his school for all pupils who were capable of benefiting by it. Besides being the author of a number of text-books for use in schools for the deaf, Dr. Elliott has devoted much time and energy towards the general improvement of educational conditions. He was one of those who organized the first conference in the British Isles of workers in the education of the deaf, and took a leading part in the establishment of the College of Teachers of the Deaf. For some fifteen years he was president of the National Association of Teachers of the Deaf, and at the International Conference held at Edinburgh last year, on the occasion of his jubilee, he was presented by the Association with an illuminated scroll and a silver centre piece. As a further recognition of his fifty years of service, the teaching staff of the Margate School presented him with a scroll and silver inkstand. Another veteran teacher at the Margate School, Mr. J. P. Barrett, who has completed fifty years of service there, also retires this year. The Mt. Airy World congratulates both gentlemen upon the completion of such records. May they live long to enjoy their well-earned retirement."

THE ALEXANDER MELVILLE BELL MEMORIAL FUND.

The following papers relating to the "ALEXANDER MELVILLE BELL MEMORIAL FUND" were signed and passed on February 2, 1907:

TRUST DEED.

ALEXANDER GRAHAM BELL TO AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

February 2, 1907.

Whereas, the late Alexander Melville Bell devoted his life to the study of the vocal organs and their proper use in speech, and in the pursuance of his investigations published works upon the subject, and devised methods of symbolizing the actions of the vocal organs, whereby he believed that any or all sounds capable of production by the vocal organs could be represented by phonetical characters, showing in a symbolical manner the actions of the vocal organs necessary to produce the sounds;

And whereas, the speech-symbols devised by Alexander Melville Bell, and for which he provided type, were used by him as a universal alphabet, for recording phonetically the sounds of all languages in one alphabet, and as a means of studying and correcting defective speech, and also as a means for facilitating the acquisition of articulate speech by deaf children.

And whereas, Alexander Graham Bell, son of the before named Alexander Melville Bell, earnestly desires that the life-work of his father may be fostered and cherished, and specially that the use of his father's speech-symbols in facilitating the teaching of speech to the deaf may be continued and improved.

And whereas, for the purpose of carrying out such intent, the said Alexander Graham Bell proposes to transfer and convey unto the American Association to Promote the Teaching of Speech to the Deaf certain of the property and estate which came to him by inheritance from his father, the said Alexander Melville Bell, and certain real estate known as No. 1525 Thirty-fifth street, Northwest, in the City of Washington, D. C., which will be conveyed to the use of said Association by a separate instrument, which property, both real and personal, shall form a fund to be known as the "Alexander Melville Bell Memorial Fund," the income from which shall be perpetually devoted to the promotion and furtherance of the life-work of the late Alexander Melville Bell.

Now, therefore, this indenture made this second day of February, A. D. 1907, by and between Alexander Graham Bell, of the City of Washington, District of Columbia, party of the first part, and the American Association to Promote the Teaching of Speech

to the Deaf, a corporation duly incorporated under the laws of the State of New York, in the United States of America, party of the second part;

Witnesseth, that for and in consideration of the premises and further the sum of One Dollar, lawful money of the United States of America in hand paid by the party of the second part unto the party of the first part at and before the ensealing and delivery of these presents, the receipt whereof is hereby acknowledged, the party of the first part does hereby assign, set over, transfer and convey unto the said party of the second part the money, stocks and other securities for money mentioned and described in the schedule marked "A" hereunto annexed and made a part hereof,

To take, have, and hold the same in and upon the uses and trusts and for the purposes hereinafter set forth and no other, viz.:

In trust to transfer, assign and convey the same unto some well-known and established trust company authorized by law to act as trustee, and to confer upon the trust company so selected full power and authority properly to administer the same, and to pay over unto the party of the second part the entire net income arising therefrom upon a covenant that the said party of the second part shall use and expend said net income in promoting the study of the vocal organs and their proper use in speech, and the development and use of speech-symbols devised by the late Alexander Melville Bell, by providing special type, by publishing his or other works upon the subject, by providing for the training of articulation teachers, and by such other means as in its judgment may be advisable to the end that the life-work of the late Alexander Melville Bell may be fostered and developed,

And upon a covenant that the said party of the second part shall have the right, whenever it shall deem it necessary or expedient for its purpose, to change the trust company so selected, and that upon being notified so to do, the trust company shall make due transfer and delivery of all and singular the trust fund and subject in its hands to such other trust company as may be selected in substitution for it.

And upon the further covenant that upon the total failure of the corporation, party of the second part, for two consecutive years to fulfill the conditions of this trust, the rights and obligations of the said party of the second part in regard to the said Alexander Melville Bell Memorial Fund shall cease, and said fund together with the accumulated income, if any, shall be transferred and paid over unto the Smithsonian Institution discharged from all and singular the conditions and obligations of this trust, to be used by said Smithsonian Institution for such purpose as it may deem best.

In testimony whereof, the party hereto of the first part has hereunto set his hand and affixed his seal this second day of February, A. D. 1907, and the party of the second part, in evidence of its acceptance of the fund and trusts imposed upon it hereunder, has caused its corporate name to be hereunto signed by its President

and its corporate seal, attested by its Secretary, to be hereunto affixed this second day of February, A. D. 1907.

Witnesses to A. G. B.
WM. A. MCKENNEY. ALEXANDER GRAHAM BELL. (*Seal.*)

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.
By A. L. E. CROUTER,
President.

Attest:
Z. F. WESTERVELT,
Secretary.

SCHEDULE "A."

[Schedule "A" enumerates securities and cash transferred, to the market value, on the date of transfer, of $64,719.23.]

TRUST AGREEMENT.

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF AND AMERICAN SECURITY AND TRUST COMPANY.

February 2, 1907.

Whereas heretofore, to-wit, on or about the second day of February, A. D. 1907, Alexander Graham Bell, by his certain deed of indenture bearing the same date, transferred and conveyed unto the American Association to Promote the Teaching of Speech to the Deaf all and singular the money, stocks or securities for money mentioned and described in the schedule attached to said deed;

And Whereas, said American Association to Promote the Teaching of Speech to the Deaf desires to conform in all respects with the covenants and provisions set forth in said indenture, and has selected the American Security and Trust Company, a corporation in the District of Columbia, with the consent of the donor of said fund, to be the depository thereof and to take title thereto for the purposes set forth;

Now, This Indenture made this second day of February, A. D. 1907, by and between the American Association to Promote the Teaching of Speech to the Deaf, a corporation duly organized and existing under the laws of the State of New York, party of the first part, and the American Security and Trust Company, a corporation existing and doing business in the District of Columbia under the laws in force therein, party of the second part,

Witnesseth, that for and in consideration of the premises and the sum of One Dollar, to it in hand paid by the party of the second part, has transferred, assigned and conveyed, and by these presents does transfer, assign and convey, unto the party of the second part, its successors and assigns, all and singular the money, stocks and

securities for money mentioned and described in the schedule marked "A" annexed to and made a part hereof.

To be by said party of the second part, its successors and assigns, taken and held as a trust fund to be known as and called the "Alexander Melville Bell Memorial Fund," the principal whereof shall be by it, its successors and assigns, held in and upon the trusts following and none other—that is, to take, have and hold the same with power for the purposes of investment or re-investment, to sell and convey or exchange the same, or any part thereof, or to substitute for the same other good and valid securities of equal value whenever, in its discretion, it may deem it best so to do, and the proceeds of any sale or sales to invest and re-invest and keep invested, with no obligation on the part of any purchaser from the trustee to see to the application of the purchase money or to the proper performance of any trust on its part to be performed, and the net income arising from or out of said fund to pay over, at convenient periods, to the party of the first part.

And the party of the first part further covenants and agrees to and with the party of the second part that the title and custody of said fund, in whatsoever it may consist, shall be and remain in and with the party of the second part or such trustee as may be substituted for it, so long as said party of the first part shall not fail to perform the covenants and agreements set forth in the deed from Alexander Graham Bell to said party of the first part, which bears even date with this instrument;

And it is further agreed by and between the parties hereto that the said party of the first part shall have the right at any time, upon reasonable notice to the party of the second part to discharge the party of the second part as trustee hereunder and substitute in its place and stead some other well-known and established trust company which shall assume all and singular the duties and functions required by the trust conferred upon the party of the first part;

And further that upon the total failure, for the period of two consecutive years, of the said corporation, party of the first part, to carry out and perform the covenants and agreements set forth in the instrument of conveyance creating the Alexander Melville Bell Memorial Fund, which instrument bears even date herewith, that all and singular the trust fund in the hands of the party of the second part, in whatsoever it may consist, or in the hands of such other trust company as may have been substituted for the party of the second part, its or their successors and assigns, as trustee aforesaid, shall be by the said party of the second part, or the substituted trustee acting in its place, transferred and paid over unto the Smithsonian Institution discharged from all and singular the conditions and obligations of this trust, to be used by said Smithsonian Institution for such purposes as it may deem best.

It is further covenanted and agreed by and between the parties hereto that the party of the second part shall, as compensation for its services, be entitled to retain out of the income from said fund as paid over a commission equal to three per centum thereon.

In testimony whereof the party of the first part has caused its corporate name to be hereunto subscribed by A. L. E. Crouter, its President, and its corporate seal, attested by Z. F. Westervelt, its Secretary, and the party of the second part, in evidence of its acceptance of the fund and the trusts imposed under this instrument, has caused its corporate name to be hereunto subscribed by Charles J. Bell, its President, and its corporate seal, attested by James F. Hood, its Secretary, to be hereunto affixed this second day of February, 1907.

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.
By A. L. E. CROUTER, *President.*

Attest:
Z. F. WESTERVELT,
Secretary.

AMERICAN SECURITY AND TRUST COMPANY.
By CHARLES J. BELL, *President.*

Attest:
CHAS. E. HOWE,
Ass't Secretary.

SCHEDULE "A."

[Schedule "A" of this document is identical with Schedule "A" of the preceding document, enumerating securities and cash to the market value of $64,719.23.]

Attention is directed to the advertisement elsewhere of the "Old Reliable Conversation Tube," and to the reduction made in price. A letter received says: "The writer gave Mr. Benjamin B. Edmands, 91 Almy street, Providence, R. I., a birthday present of one of our conversation tubes, and he, as well as many others, say there is nothing better, and he prefers to use it to an electric device of the latest and most expensive kind, which his son gave him as a present some time ago. Mr. Edmands was the Prohibition candidate for President some few years ago."

BLANK DIAGRAMS.

Elsewhere are given pages of face diagrams in blank, that is to say, with the movable parts omitted. These are for the convenience of teachers who may wish to use them in writing "diagram readings" for their pupils. The perforations permit of the pages being removed. Similar sheets of blanks have been printed off and may be procured in quantity, by teachers wishing them, at the price of $.50 per hundred sheets, each sheet having 15 diagrams.

THE ASSOCIATION REVIEW is a publication of the American Association to Promote the Teaching of Speech to the Deaf. It is sent free to Active Members of the Association. Active membership is obtained upon payment to the Treasurer of the membership fee of two dollars ($2), or its equivalent in foreign currency—8s. 4d. in English money; 8m. 2pfg. in German money; 10fr. 2c. in French money; 7 kr. 50 ore. in Norwegian, Swedish, and Danish money; and 10l. 2c. in Italian money. Postal money orders should be drawn on Washington, D. C., in favor of F. W. Booth.

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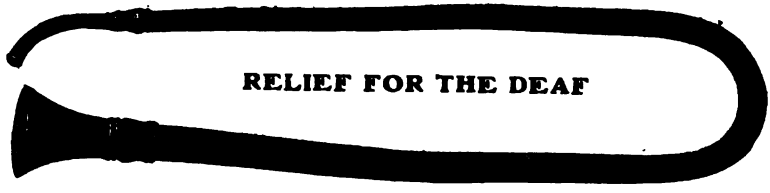

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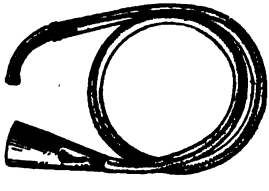

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_____ *1908.*

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1525 Thirty-fifth Street N. W., Washington, D. C.:

I hereby make application for Active Membership in the American Association to Promote the Teaching of Speech to the Deaf for the year 1908-9.

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THE ASSOCIATION REVIEW

PUBLISHED BY THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF

FRANK W. BOOTH, EDITOR

December, 1908

The Real Romance of the Telephone, or Why Deaf Children in America Need no Longer be Dumb, XXIX - FRED DE LAND 449

Special Reports upon the Deaf, Based on the Returns of the Twelfth Census—Concluded - ALEXANDER GRAHAM BELL 455

The Physiology of the Blind (The Vicariate of the Senses) M. KUNZ 465

The College of Teachers of the Deaf and Dumb, London - - - - - - - - - F. G. BARNES 494

At the Constitution House; or, the Unwelcome Guest - A TEACHER 500

A Few Words upon the Pedagogic System of Walther - I. LANDRAIN 505

The Institution Press - - - - - - - - - - - - 512

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Editorial Comment - - - - - - - - - - - - 538

Index to Volume X - - - - - - - - - - - i to xvi

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The American Association to Promote the Teaching of Speech to the Deaf welcomes to its membership all persons who are interested in its work. Thus the privilege of membership is not restricted to teachers actively engaged in the instruction of deaf children, but is intended to include Directors or Trustees of schools for the deaf, parents and guardians of deaf children, the educated deaf themselves who wish to aid by the weight of their influence and by their coöperation the work that has done so much for them, and all other persons who may have had their hearts touched with a desire to show their interest and to help on the work.

Every person receiving a "sample copy" of THE ASSOCIATION REVIEW is invited to join the Association. The membership (or dues) fee is $2.00 (8*s.* 4*d.*) per year, payment of which to the Treasurer secures (after nomination to and election by the Board of Directors) all rights and privileges of membership, together with the publications of the Association, including THE ASSOCIATION REVIEW, for one year. To *non-members* the subscription price of THE ASSOCIATION REVIEW is $2.50 (10*s.* 4*d.*) per year.

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HOME OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF

THE ASSOCIATION REVIEW.

VOL. X, NO. 5.

DECEMBER, 1908.

THE REAL ROMANCE OF THE TELEPHONE, OR WHY DEAF CHILDREN IN AMERICA NEED NO LONGER BE DUMB.[1]

BY FRED DE LAND.

CHAPTER XXIX.

SCIENTISTS SHOW THEIR APPRECIATION.

Although he hesitated to take the time from his professional duties, Graham Bell presented to the members of the American Academy of Arts and Sciences, a resume of his experiments, under the title of "Researches in Telephony." He touched upon the experiments and the inventions of Gray and Reis, and the discoveries of Page, Marrian, Beatson, Gassiot, De la Rive, Matteucci, Guillemin, Wertheim, Wartmann, Janniar, Joule, Laborde, Legat, Poggendorff, DuMoncel, Delezenne, Ferguson, Paul la Cour, Helmholtz, Gore, Sullivan, and others, giving due credit to each. He made it clear to his hearers that the essential factor in this problem of speech transmission was not the devising of a definite form of instrument or tube, nor an apparatus having definite structural peculiarities, nor the combining of a certain number of parts into an operating whole. The solution of the problem was to so control the movements of the receiver diaphragm that its motions would exactly copy the vibrations of the transmitting diaphragm and thus set up a series of sound waves in the receiver exactly corresponding to those produced by the vocal organs. In other words, it was to so cause the electric current to flow that the receiver would not only reproduce a few or a majority or about all of the spoken words that impinged on the diaphragm of the transmitter in the form of sound waves, but would reproduce *each and all and every one* of the variations in articulation, with all

[1] Commenced in the October, 1905, number.

their varying characteristics, whether expressed in lightest whisper, in slow, sonorous sentence, or in quick, abrupt remark.

Here the world of science received some of the details of a new method for the transmission of speech, learned of the creation of a new art and began to dimly perceive how great was this marvellous achievement modestly explained by this unassuming but enthusiastic young teacher; how the original and magnificent conception had been materialized into tangible, useful form, and how the masterly mind that perfected the theory was also able to devise a means that makes possible constant utilization of this method. Here the facts went on record, but so vast in its magnitude was this contribution to science that months elapsed before scientists were able to grasp all that it involved. Then they began to perceive that in the invention of the electric-speaking telephone, the simple combination of diaphragm and electro-magnet and undulating continuous current was the outgrowth of conception and perfected theory, and formed a practical materialization of both; that conception, theory, and apparatus were the honestly earned fruits not only of the inventor's "intellectual capacity and precision of thought," but of a thorough knowledge of the essential elements in each and every factor entering into the problem of the transmission of speech electrically.

Long afterwards the world learned how this remarkable knowledge was gained through long and patient research, through countless experiments, through financial expenditures that involved personal deprivations and hardships, and through discouraging criticism and bitter ridicule on the folly of wasting time and money in inventing a pretty but profitless scientific toy.

On Wednesday, July 11, 1877, Graham Bell and Mabel Hubbard were united in marriage at the home of her parents in Cambridge. A few days later the bridal couple left for England and a tour on the Continent, and did not return to this country until August, 1878.

In 1870, Graham Bell, then practically a penniless student, left London in search of health. Seven years later he returns with a lovely bride and is the recipient of many honors. For in 1876, Sir William Thomson (now Lord Kelvin) gave the telephone its meed of honor as a scientific achievement surpassing all else that he saw at the Centennial; while a few months later Mr. Preece displayed the first pair of commercial telephones received in England, having secured them from Graham Bell to show to

the members of the British Association for the Advancement of Science at the Plymouth meeting.

In November, 1877, Graham Bell is presented to Queen Victoria and has the pleasure of personally explaining the mechanism of the telephone. Then her Majesty takes the receiver and listens to the songs that Miss Kate Field is singing at Osborne Cottage. On this Monday evening the Queen was entertained from half-past nine until nearly midnight with explanations and experiments and gave expression to her delight.

Twenty-two years previously and just after ascending the throne, Queen Victoria had enjoyed the pleasure of a so-called "telephone concert" given through an adaptation of Wheatstone's method of transmitting musical notes with the aid of a fine-grained wooden rod. But only musical notes were transmitted.

In this connection it is interesting to recall that as a result of his many experiments in the mechanical transmission of sounds during the years 1820-28, Wheatstone stated that on discovering "that sounds of all kinds might be transmitted perfectly through solid wires and reproduced in distant places, I thought I had the most efficient and economical means of establishing telegraphic (or rather telephonic) communications between two remote points that could be thought of .... Experiments on a large scale, however, showed me that the velocity of sound was not sufficient to overcome this resistance and enable it to be transmitted efficiently through long lengths of wire .... The transmission to distant places of a multiplication of musical performances are objects of *far less importance* than *the conveyance* of *articulations of speech.*"

In 1823, Wheatstone explained how by means of a long deal rod he had connected a lyre in one room with another lyre placed in an upper room, and how when one instrument was played upon, the same strains were reproduced in the other instrument. This mysterious reproduction of music was a constant source of wonder to the public, who called the sounding instrument "the enchanted lyre." But Wheatstone christened it "the telephone," and thus coined a word now in daily use. Then in 1827 he coined the word "microphone," in describing "an instrument which from its rendering audible the weakest sounds, may with propriety be named the microphone." Wheatstone's musical "telephone" or "enchanted lyre" attracted so much attention that the editor of the *Repository of Arts* suggested in the issue of September 1, 1821,

that the day may come when "the music of an opera (may be conveyed) like gas through snug conductors from the main laboratory of harmony to distant parts of the metropolis."

In his lecture before the Society of Arts in London, in November, 1877, Graham Bell referred to some of Wheatstone's "early telephonic experiments," as well as to all important experiments in telephony made prior to the conception of his theory.

While in London Graham Bell endeavored to have a handsome pair of telephones made for the Queen, but failing to secure what he desired, he wrote a letter to Thomas A. Watson, reading in part as follows:

"Dear Mr. Watson: .... Mr. Williams would be quite flattered if he could only know how he has risen in my estimation since I came here, and how I appreciate, as I never did before, the kindness in giving me facilities for the execution of my ideas, and his good sense in forwarding, even at considerable trouble, the efforts of inventors, instead of discouraging inventions as much as possible. This brings me to the object of this letter, which is to request you to help me in developing some new ideas, and to ask you to have some work done for me in America. In the first place, we cannot have a decent telephone made in England—not even for Queen Victoria herself. I send you in despair the telephones made for Her Majesty, and ask you to make them work even respectably well, and reforward them here .... I cannot believe that ivory is any less suitable for telephonic purposes than ebonite, for its physical properties are the same, and I therefore send Her Majesty's telephones to you for your inspection."

Now a few words about the personality of the man and the esteem in which he was held during this period. The New York *Evening Post* of May 16, 1877, contains an interesting reference to his work, reading in part: "Professor Bell is a man of most genial and kindly presence, so courteous and gracious in manner that you could not feel yourself an intruder though you chanced to drop into his room when some private class was under special training. At the same time though his affability sets you at ease, you could not fail to observe that he is one of the busiest of men, so intent upon the development of the plans which occupy his life that he has no leisure for visitors who are not interested in his work. He is young, apparently not more than five and thirty (he was just thirty), with an unusually prepossessing countenance, very happy in its expression; of pale complexion, with jet black hair brushed up from his forehead, and pleasant, sparkling black

eyes—the face of a man all engaged in his work and finding satisfaction in it."

Another estimate of Graham Bell's personality by Philip R. Fowle reads: "The immense popularity the great inventor attained among all classes—scientists, business men, and particularly, his deaf-mute scholars—while teaching in the Horace Mann School at Boston, is a fair index to the lovable character of the man. Of the industry, cheerfulness, patience, and loving interest in the welfare of his afflicted pupils, tales without number are told, and it was due as much to these attributes as to any other one thing that his brother scientists so spontaneously proffered him the aid of the deductions they had drawn from experiments along lines similar to the ones he was following."

That Graham Bell appreciated this kindly feeling that was prevalent among those with whom he came in contact in the days when discouragement and derision appeared to be the only reward the future held in store for him, is shown in his public expressions gratefully acknowledging the assistance so generously rendered. On several occasions he publicly referred not only to the personal generosity of Professor Lewis B. Monroe, but to his nobility of character, and to the fact that by reason of his professional ability "every articulation teacher, whether a teacher of the deaf or a teacher of the hearing, should remember with gratitude the labors of Professor Monroe."

In addressing the Society of Telegraph Engineers, in London, on October 31, 1877, Graham Bell said, in naming certain friends: "And here I wish to express my indebtedness to several scientific friends in America for their co-operation and assistance .... The very honorable way in which they from time to time placed before me the results of their discoveries entitles them to my warmest thanks and to my highest esteem. Professor Pierce was the first to demonstrate the extreme smallness of the magnets which might be employed."

Again when telling the members of the American Association for the Advancement of Science that he and Sumner Tainter had demonstrated that "without the use of a conducting wire as in electric telephony, we can speak from station to station, wherever we can project a beam of light," Graham Bell said: "I am extremely glad that I have had the opportunity of making the first publication of these researches before a scientific society, for it is from scientific men that my work of the last six years

has received its earliest and kindest recognition. I gratefully remember the encouragement which I received from the late Professor Henry, at a time when the speaking telephone existed only in theory. Indeed, it is greatly due to the stimulus of his appreciation that the telephone became an accomplished fact. I cannot state too highly, also, the advantage I derived in preliminary experiments on sound vibrations in this building from Professor Cross, and near here from my valued friend Dr. Clarence J. Blake. When the public were incredulous of the possibility of electrical speech, the American Academy of Arts and Sciences, the Philosophical Society of Washington, and the Essex Institute of Salem, recognized the reality of the results and honored me by their congratulations. The public interest, I think, was first awakened by the judgment of the very eminent scientific men before whom the telephone was exhibited in Philadelphia, and by the address of Sir William Thomson before the British Association for the Advancement of Science. At a later period when every practical telegrapher considered the telephone as a mere toy, several scientific gentlemen, Prof. John Pierce, Prof. Eli W. Blake, Dr. Channing, Mr. Clark, and Mr. Jones of Rhode Island, devoted themselves to a series of experiments for the purpose of assisting me in making the telephone of practical utility, and they communicated to me from time to time, the results of their experiments with a kindness and generosity I can never forget. It is not only pleasant to remember these things and to speak of them, but it is a duty to repeat them, as they give a practical refutation to the often repeated stories of the blindness of scientific men to unaccredited novelties, and of their jealousy of unknown inventors who dare to enter the charmed circle of science."

(*To be continued.*)

SPECIAL REPORT UPON THE DEAF, BASED ON THE RETURNS OF THE TWELFTH CENSUS.[1]

PREPARED BY ALEXANDER GRAHAM BELL, AS EXPERT SPECIAL AGENT OF THE CENSUS OFFICE.

(*Continued from page* 364.)

Occupations.—The same classification of occupations was adopted for the deaf as was used for the general population at the Twelfth Census. A comparison is therefore possible of the deaf and of the total population 10 years of age and over gainfully employed.

	Total number 10 years of age and over.	Number gainfully employed.	Per cent.
Total population	57,949,824	29,073,233	50.2
The deaf	83,388	32,142	38.5

These figures indicate that deafness is a drawback to some extent in securing employment; but they also show that the deaf as a class are by no means a burden upon the community. Few of the deaf who are under 20 years of age are engaged in gainful occupations (Table LXXII); but this is no discredit to them, for the vast majority of these cases are attending school (Table LXIV). Of those over 20 years of age 43 per cent are engaged in gainful occupations—for Table LIX shows a total of 70,602 who are over 20 years of age, and Table LXXIII shows that 30,353 of these, or 43 per cent, are engaged in gainful occupations.

Table LXVI shows the number and per cent of the deaf in each occupation contrasted with the per cent of the total population in each group.

[1] A reprint of "Special Reports: the Blind and the Deaf," in the part relating to the Deaf; issued by the Department of Commerce and Labor, Bureau of the Census, Washington, 1906. Commenced in the October, 1906, number of the REVIEW and concluded in this number. For "General Tables," 1 to 47 inclusive—omitted from this republication—see the original volume.

TABLE LXVI.—*Number and per cent of deaf and per cent of total population in each group of occupations.*

CLASS OF OCCUPATIONS.	THE DEAF.		Per cent of total population.
	Number.	Per cent.	
All occupations	32,142	100.0	100.0
Agricultural pursuits	14,068	43.8	35.7
Manufacturing and mechanical pursuits	9,442	29 4	24.4
Domestic and personal service	5,316	16.5	19.2
Trade and transportation	2,236	6.9	16.4
Professional service	1,080	3.4	4.3

Of the deaf gainfully employed, 89.7 per cent are found in the three groups in which perfect or even partial hearing is not essential, while in the two remaining groups—trade and transportation and professional service—which require hearing and speaking power, only a small proportion of the deaf (10.3 per cent) report employment.

That the degree of deafness considerably affects the occupation is shown in Table LXVII.

TABLE LXVII.—*Number and per cent of the deaf in each group of occupations, by degree of deafness.*

CLASS OF OCCUPATIONS.	TOTAL.		DEGREE OF DEAFNESS.			
			Totally deaf.		Partially deaf.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
All occupations	32,142	100.0	12,678	39.4	19,467	60.6
Agricultural pursuits	14,068	100.0	4,761	33.8	9,307	66.2
Manufacturing and mechanical pursuits	9,442	100.0	4,583	48 5	4,859	51.5
Domestic and personal service	5,316	100.0	2,395	45.1	2,921	54.9
Trade and transportation	2,236	100.0	552	24.6	1,684	75.4
Professional service	1,080	100.0	387	35.8	693	64.2

The percentage for professional service is high because it includes teachers, professors in colleges, etc., and artists and teachers of art. The teachers show a very large per cent totally deaf (206 out of 294), the majority of whom probably are instructors in schools for the deaf. In nearly every other kind of professional service the totally deaf constitute a very small minority.

Table LXVIII shows the obvious connection between school attendance and the opportunity for obtaining gainful employment.

TABLE LXVIII.—*Number and per cent of the deaf and of the deaf gainfully employed, classified according to schooling.*

	TOTAL NUMBER OF DEAF.		DEAF GAINFULLY EMPLOYED.	
	Number.	Per cent.	Number.	Per cent.
Aggregate	89,287	100.0	32,142	100.0
Schooling	65,717	73.6	26,030	81 0
No schooling	13,557	15.2	3,950	12.3
Not stated	10,013	11.2	2,162	6.7

The deaf who have attended school show a much larger per cent of their number pursuing gainful occupations than of those who have not attended school.

The kind of employment—whether skilled or unskilled—is also largely determined by school attendance. In Table LXIX the number in each group of occupations is distributed according to schooling.

TABLE LXIX.—*Number and per cent of deaf gainfully employed, by class of occupations, in relation to schooling.*

CLASS OF OCCUPATIONS.	DISTRIBUTION ACCORDING TO SCHOOLING.							
	Total.		Schooling.		No schooling.		Not stated.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
All occupations	32,142	100.0	26,030	81.0	3,950	12.3	2,162	6.7
Agricultural pursuits	14,068	100.0	10,668	75.8	2,294	16.3	1,106	7.9
Professional service	1,080	100.0	1,037	96.0	16	1.5	27	2.5
Domestic and personal service	5,316	100.0	3,903	73.4	988	18.6	425	8.0
Trade and transportation	2,236	100.0	1,979	88.5	119	5.3	138	6.2
Manufacturing and mechanical pursuits	9,442	100.0	8,443	89.4	533	5.7	466	4.9

Those engaged in professional service, manufacturing and mechanical pursuits, and trade and transportation show a very large percentage of their number schooled, ranking in this respect in the order named; while those in agricultural pursuits show next lowest, and those in domestic and personal service, the smallest percentage schooled. In the last two classes of occupations lack of schooling is no great drawback, while in the remaining three it is almost a total disqualification.

Unfortunately for purposes of comparison, the kind of school was not stated in over one-third of the cases. This failure to state kind of school was particularly marked among those in agricultural and in manufacturing and mechanical pursuits.

In Tables LXXII, LXXIII, and LXXIV the occupations of the deaf are given in detail.

Table LXX shows the deaf, by present age (10 and over, and 20 and over), period of life when deafness occurred, and degree of deafness, giving the number and percentage of each class who are employed in gainful occupations.

TABLE LXX.—*The number and per cent of the deaf 10 years of age and over gainfully employed, classified by present age, period of life when deafness occurred, and degree of deafness.*

PRESENT AGE, PERIOD OF LIFE WHEN DEAFNESS OCCURRED, AND DEGREE OF DEAFNESS.	Total.	GAINFULLY EMPLOYED.	
		Number.	Per cent.
Present age 10 years and over	83,388	32,142	38.5
Period of life when deafness occurred:			
Childhood (under 20)	44,549	18,073	40.6
Adult life (20 and over)	35,825	13,172	36.8
Unknown	3,014	897	29.8
Degree of deafness:			
Totally deaf	32,831	12,678	38.1
Partially deaf	50,557	19,464	38.5
Present age 20 years and over	70,602	30,353	43.0
Period of life when deafness occurred:			
Childhood (under 20)	31,763	16,405	51.6
Adult life (20 and over)	35,825	13,172	36.8
Unknown	3,014	776	25.7
Degree of deafness:			
Totally deaf	23,272	11,670	50.1
Partially deaf	47,330	18,683	39.5

From this table it appears that the deaf from childhood are more self-supporting than the deaf from adult life.

This is specially surprising when we consider the fact that the deaf from childhood include practically all of the deaf and dumb, and that most of them are totally deaf; whereas the deaf from adult life include none of the deaf and dumb (at least substantially none), and most of them are only partially deaf.

Of the deaf from childhood who were over 10 years of age, 40.6 per cent were gainfully employed, and of the deaf from adult life only 36.8 per cent (Table LXX).

These figures, however, do not fully express the discrepancy between the two classes in this respect; for all of the deaf from adult life were, of course, 20 years of age or over, because they did not lose hearing until after reaching that age; whereas many of the deaf from childhood (12,786) were between 10 and 20 years of age, and comparatively few of these were earning their livelihood, because most were in school.

Of the deaf from childhood who were 20 years of age or over, the majority (51.6 per cent) were gainfully employed, against 36.8 per cent of the deaf from adult life (Table LXX).

Of the totally deaf who were 20 years of age or over (most of whom were deaf from childhood) 50.1 per cent were earning their livelihood, but only 39.5 per cent of the partially deaf (most of whom became deaf in adult life). (Table LXX.)

The deaf from adult life are undoubtedly better equipped by nature for the task of earning a livelihood, for most of them possess perfect speech and partial hearing; and yet the deaf from childhood seem to be more successful in this respect.

The explanation for this apparently anomalous condition of affairs seems to lie in the fact that many persons who become deaf in adult life fail to accommodate themselves to the new condition of deafness. They lose their positions on account of increasing deafness; and feeling themselves to be too old to begin life all over again in their crippled condition by seeking some new occupation with which deafness would not interfere, they lose heart and drop out of the struggle, becoming dependent upon their friends for support, or living upon the savings of former years, without entering into new pursuits.

In the case of the deaf from childhood, however, the accommodation to the environment has become complete before the dawn of adult life. Many of these persons have never experienced any other condition than that of deafness; and most of them enter upon the duties and responsibilities of adult life with that feeling of buoyancy and hope that is so characteristic of youth.

Nor should we neglect to notice in this connection the powerful influence exerted on the deaf from childhood by the special schools which have been established for their benefit.

The sentiment is very early instilled into their minds that these schools are not in any sense "asylums" or "charitable institutions," but simply "schools" for their education, analogous to the ordinary public schools of the country; and that they themselves are not—and never should be—objects of charity. The spirit of dependence is discouraged; and every effort made to stimulate a spirit of independence and self-help. The pupils are led to believe that it is the duty of every deaf boy and girl to learn some means of livelihood; and that a stigma attaches to those who become a burden upon their friends or the public.

Sentiment counts for a great deal with the young; but the special schools go further than this by providing manual training and art instruction for advanced pupils.[1]

These schools very generally teach the use of tools and give manual training in the form of sloyd. Mechanical drawing, too, and art instruction are given to those who manifest abilities in these lines. Many of our schools support special trade shops in which specific occupations are taught, like shoemaking, cabinet-making, etc., although it is perhaps doubtful whether this specialization of manual training during school life is of as much value to the deaf as instruction of a more general character, embracing elements that are common to a number of trades. Comparatively few of the deaf from childhood pursue in adult life the specific occupations they were taught in school; and the very great variety in the occupations actually pursued seems to render diversity rather than specialization a desirable aim during the school period, leaving specialization into a specific occupation to come later in life, through actual work in ordinary shops, which are more likely to be up-to-date in their

[1] *Industries taught in American schools for the deaf.*—Architectural drawing, art, baking, barbering, basket making, blacksmithing, bookbinding, bricklaying, broom making, cabinetmaking, calcimining, carpentry, chalk engraving, cementing, chair making, china painting, construction work, cooking, clay modeling, coopery, domestic science, drawing, dressmaking, electricity, embroidery, engineering, fancy work, farming, floriculture, gardening, glazing, handicraft, harness making, house decoration, half-tone engraving, housework, horticulture, illuminating, ironing, knitting, lace making, manual training, mattress making, millinery, needlework, painting, paper hanging, plastering, plate engraving, photography, printing, pyrography, raffia, sewing, shoemaking, sign painting, sloyd, stone laying, tailoring, tinwork, typewriting, venetian iron work, weaving, wood carving, wood engraving, wood turning, wood working, working in iron, and the use of tools.—[From the American Annals of the Deaf.]

methods of work than the trade shops of the schools, which do not feel the stimulating effects of competition.

The Census tables relating to occupation reveal the astonishing fact that there are extremely few occupations pursued by the people of the United States in which deaf persons do not find employment. This is not only surprising, but at the same time encouraging, as widening the scope of possible usefulness for the deaf.

There can be no question that the industrial training provided by our special schools has been of material assistance to their pupils in securing employment in adult life, and it is specially worthy of notice in this connection that very many of the deaf from childhood have had the opportunity of taking this training, whereas hardly any of the deaf from adult life have attended special schools.

Out of 35,924 persons who became deaf in adult life, only 135 attended special schools; whereas out of 50,296 persons deaf from childhood, 25,071 received training in special schools (including 225 who attended both special and other schools). (Table 2.)

From this it appears probable that our special schools for the deaf are mainly responsible for the fact that the deaf from childhood no longer constitute a dependent class. The majority, or 51.6 per cent, are gainfully employed in adult life. The percentage rightfully entitled to be regarded as self-supporting is even larger than this, for the chief occupation reported by married females ("keeping house") has not been included among gainful occupations.

TABLE LXXI.—*The number and per cent of the deaf 10 years of age and over gainfully employed, classified by ability to speak and degree of deafness.*

ABILITY TO SPEAK AND DEGREE OF DEAFNESS.	Total.	GAINFULLY EMPLOYED.	
		Number.	Per cent.
The deaf 10 years of age and over	83,388	32,142	38.5
Ability to speak:			
Well	54,506	21,274	39.0
Imperfectly	8,152	2,722	33.4
Not at all	20,730	8,146	39.3
Totally deaf	32,831	12,678	38.1
Ability to speak:			
Well	7,727	3,094	40.0
Imperfectly	5,084	1,626	32.0
Not at all	20,020	7,958	34.7
Partially deaf	50,557	19,464	38.5
Ability to speak:			
Well	46,779	18,180	38.9
Imperfectly	3,068	1,096	35.7
Not at all	710	188	26.5

Table LXXI shows the deaf who are 10 years of age or over, by ability to speak and degree of deafness; giving the number and percentage of each class who are employed in gainful occupations.

Out of 62,658 deaf persons 10 years of age or over who were able to speak, 23,996, or 38.3 per cent, were employed in gainful occupations. Out of 20,730 deaf persons who were unable to speak, 8,146, or 39.3 per cent, were gainfully employed (Table LXXI).

It thus appears that the deaf and dumb, as a class, are more self-supporting than the deaf who speak.

This is rather a startling conclusion; and it is very easy to draw false inferences from the fact. It can hardly be doubted that the deaf who speak, even imperfectly, have some advantage over those who can not speak at all; so that it is obvious that the above result arises, not from the difference of speaking power, but from other differences not specified in the table.

The fact of the matter is that all of the deaf and dumb were deaf from childhood; whereas the majority of the deaf who speak lost hearing in adult life. The deaf from adult life are inferior in self-supportng power—not, of course, because they can speak, but because of other conditions referred to more particularly in remarks concerning Table LXX; and the deaf and dumb are superior in this respect—not because they are dumb, but because of the industrial training they have received in special schools.

In order to ascertain the influence of speech upon employment, we should eliminate the deaf from adult life and study the occupations of the deaf from childhood who speak well, imperfectly, or not at all, so as to have no other substantial point of difference between the classes considered, excepting their ability to speak. Unfortunately the tabulated returns do not give us the information desired.

We can ascertain the period of life when deafness occurred, and the present age, of the deaf who speak well, imperfectly, or not at all; and also of the deaf who are gainfully employed, but we have no tables correlating the results. We may gain some light upon the subject, however, from the consideration of the fact that the totally deaf consist mainly of persons deaf from childhood, so that the totally deaf cases noted in Table LXXI were probably all deaf from childhood. Of those who could speak well, 40 per cent were employed in gainful occupations; whereas only 34.7 per cent of those who were deaf and dumb were gainfully employed. The ability to speak well was evidently of advantage.

The advantage is not so obvious in the case of the totally deaf

who speak imperfectly, of whom only 32 per cent were gainfully employed. It should be remembered, however, that in these cases we are dealing largely with persons who have acquired speech artificially by instruction in school, and that the table includes many persons who are between 10 and 20 years of age.

Articulation teaching is of so comparatively recent origin that most of the deaf who have acquired speech artificially by instruction in schools are still quite young, few having passed middle life; whereas the deaf and dumb, and the deaf who speak well, contain persons of all ages—even up to extreme old age.

The difference between the three classes in respect to age may be illustrated by taking the aggregates given in Table LXXI (composed of persons 10 years of age or over), and showing the number and percentage who are 20 years of age or over:

CLASS.	10 years of age and over.	20 years of age and over.	Percentage 20 years of age and over.
Aggregate gainfully employed	32,142	30,353	94.4
Speak well	54,506	51,376	94.2
Imperfectly	8,152	4,809	59.0
Not at all	20,730	14,419	69.5

As more than 94 per cent of the aggregate gainfully employed are 20 years of age or over, it follows that the number 20 years of age or over who are gainfully employed among the three classes named (the deaf who speak well, imperfectly, or not at all) would be only slightly changed from the figures of the table (Table LXXI); but the percentage gainfully employed would be considerably increased in the case of the deaf who speak imperfectly—in fact, almost doubled—because it would be based upon a smaller total little more than half its former value (59 per cent).

Not only does ability to speak affect the opportunity for engaging in pursuits in general, but it also, in a large measure, determines the choice of occupation. The following percentages are taken from Table 47, and show the percentage of the deaf who speak well, imperfectly, or not at all, who are engaged in the principal groups of occupations:

OCCUPATION.	ABILITY TO SPEAK.		
	Well.	Imperfectly.	Not at all.
All occupations	100.0	100.0	100.0
Agricultural pursuits	46.1	40.9	38.6
Professional service	4.1	2.5	1.8
Domestic and personal service	14.7	19.3	20.4
Trade and transportation	8.8	3.6	3.3
Manufacturing and mechanical pursuits	26.3	33.7	35.9

The advantage of speech is most manifest in agricultural pursuits, professional service, and trade and transportation; the percentage employed in these occupations being greatest among those who speak well, least among those who do not speak at all, and intermediate among those who speak imperfectly. On the other hand, speech does not seem to be of so much consequence in domestic and personal service and manufacturing and mechanical pursuits, the order of the percentages being reversed.

THE PHYSIOLOGY OF THE BLIND.[1]

(THE VICARIATE OF THE SENSES.)

BY M. KUNZ, ILLZACH-MÜLHAUSEN, GERMANY.

It is a widely spread opinion that the loss of one sense produces such a strengthening of the other organs of sense, that they are enabled to become substitutes, at least to a very large extent, for the missing sense, acting, so to speak, as vicariates.

It is an actual fact that people speak of a "vicariate of the senses." Thus the loss of sight is said to sharpen the sense of hearing, and especially the sense of touch, in an almost supernatural manner. In my youth I even read in a text-book that in olden times a blind man had been appointed court tailor of a king, because he made the most beautiful many-colored clothes for him, since he was able to distinguish even the finest shades of color by the touch.

I was then at an age when you believe everything you read. It therefore became an axiom for me that the blind can "feel" colors. In after life, during my activity in middle and higher schools for seeing pupils, I did not fail to make proselytes for my opinion whenever light and heat were spoken of in the instruction in physics, and simply endeavored to seek a plausible explanation of this strange "fact."

I finally thought that I had found such an explanation in the varying degrees of heat possessed by different colored materials. I could not fully understand that colors as such could be distinguished by the sense of touch, because I reasoned this way, that if that were true, it would also be possible to distinguish odors by the touch, to see or feel sounds, and distinguish tastes by the skin. But of the "fact" I had no doubt. Nor did I consider myself alone in this view. At any rate, some eighteen years ago a prominent educator maintained in my presence that he had known a blind person who could distinguish colors with her hand. When, meanwhile, I had for several years been a teacher in an institution for the blind, and had become a heretic, I vainly endeavored to convert that gentleman to my new opinion, by telling him that the blind person in question must still have received some impressions of light, that consequently she could distinguish colors by the eye, or tell different colored wool

[1] Translated for the ASSOCIATION REVIEW, with the permission of the author, and reprinted in pamphlet form by the Volta Bureau, Washington.

from other indications, *e. g.*, position, size, or consistence of the balls, the texture of the material, etc. I even explained to him the method followed in our institution where totally blind girls work with materials of many different colors (wool, cotton, bristles, etc.). All in vain! He stuck to his opinion, and seemed as if he would have liked to say to me: "Your pupils have remained very backward."

When we consider how in many institutions for the blind—especially those in Romanic and Slavic countries—people fairly revel in colors, so as to heighten the admiration of the public, we cannot be astonished if such views become firmly rooted. Thus I have never seen such an orgy of colors as last year in the female work of the Naples institution for the blind (Congress of teachers of the blind at Milan). I am sorry to state that no strong opposition is raised to such entirely erroneous ideas which only too often are expressed by visitors of institutions for the blind. We meet with so many fatal prejudices which prove an injury to the blind, that we often hesitate to crush those errors, be they ever so ridiculous, which strengthen the belief in the capability of the blind, and might therefore prove useful to them.

How often do we hear people, who tell us the most incredible and impossible things of the delicate feeling of the blind, ask the questions: "But can they find their own bed, their own washbowl, etc.? Can they dress themselves, eat without aid? Do they find their mouth? Can they speak?" etc., etc.

Who will be astonished if some wag of a teacher of the blind not only does not root out these erroneous ideas in such people, which they foster with tender care, but even tells them some more fairy tales? Of course, this is not a nice thing to do, but it is easily explained. There are evidently some blind who endeavor to make themselves important by exaggerations and deceptions.

When twenty years ago I exchanged the directorship of a school for seeing pupils for that of an institution for the blind, I likewise harbored amongst the rest the fairy tale of the ability of the blind "to feel colors," but was soon cured by the blind themselves.

I had also often read and heard that the blind were able to distinguish the most infinitessimal unevenness in a body, which would entirely escape the touch of a seeing person. I consequently expected unreasonable things from the sense of touch of my pupils.

When the General Congress of teachers of the blind of Frankfurt-on-the-Main (1882), referring to my report on instruction in geography, requested me to prepare maps for the blind on the prin-

ciples laid down by me, and when numberless attempts at last let me reach my object, I was not a little proud to print very sharply defined embossed or raised lines of rivers, cities, and boundaries. I examined the maps with closed eyes, and was able to follow every line with the points of my fingers, which had become hard by the continuous labor of engraving in hard wood. But when I tried to use these maps in the instruction of a class of large, intelligent girls—one of whom has been for years a teacher in a foreign country—the sense of touch failed. They did not find their way on the map. At first I thought it was obstinacy, and became impatient. Then, to please me, they deceived me, and in order to satisfy me, they pretended to have made observations which they had not made and could not have made. I found out their game, and immediately turned the geographical instruction over to a teacher whose views were not clouded by a morbid affection for "his children," and to whom the pupils, without fear of hurting his feelings, told the truth; so that I likewise learned it.

At that time the maps had been sent for examination to nearly all European institutions for the blind.

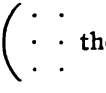
Very nearly the same replies were received from all: "Beautiful, but too fine;" "splendid, but not accessible to the touch," etc. "K. has shown himself a master of geographical representation, even if . . . ." Thus spoke the presiding officer of the geographical commission at the Amsterdam Congress. In every case there was a "but" or "if." The European colleagues were not satisfied, until I furnished maps which—besides correct representation of the mountain ranges—showed lines of rivers and rows of points, which any one could feel even with leather gloves, and which would guide even fingers with a very hard touch, like the rails guide the wheel of the car. Only after this object had been reached, the atlas, now comprising 83 maps, found universal favor and was introduced in the institutions for the blind of most civilized nations of the world (so far about 100,000 sheets have been ordered, 30,000 by the German-Austro-Danish Association for promoting the education of the blind).

In this case also I had to lower my expectation very considerably regarding the sense of touch, if I was to make myself useful to the great mass of the blind. I had the same experience with the zoological and botanical representations, and especially with those used for instruction in physics. Entirely new forms had to be prepared repeatedly, before the required accessibility to touch was reached. Today, after an experience of twenty years, I expect much

less from the sense of touch, but very much more from the power of resistance of the paper.

A fully tested measure for the sense of touch—the power of the blind to localize, or their sense of space—has been furnished by the Braille pointed type, called so after their blind inventor, Louis Braille.

Not more than twenty or twenty-two years ago the raised Latin capital types (A, B, C, D, etc.) were universally used in Germany; and in this type the German Bible was printed here, 1859-1863. The blind could decipher this type and read it slowly in their youth, but only with great difficulty later in life, unless they knew the greater part of the contents by heart; this type was really intended more for the seeing teacher than for the blind. In the course of the last twenty years this type has, in spite of the most violent objections of many teachers of the blind, been completely ousted from the printing offices, and been replaced by the pointed type.

The basis of this last-mentioned type is formed by two perpendicular rows of 3 points, each  the French é).

These conical points were, twenty years ago, 3 millimeters distant from each other—measured from point to point. (Measured at the base 4 millimeters.) These measurements, suitable for the fingers of the blind, had been found in a purely empirical way. To save space, these measurements were reduced to 2½ and 3½ millimeters, respectively, in France even to 2¼, and 3 millimeters at the base. But it soon became apparent that, as far as the majority of the blind was concerned, the limits of the sense of touch, and of legibility, had been exceeded. Our blind find great difficulty in reading the editions of the French classics printed in this type. Consequently, Germany, Austria, etc., have returned to the old measurement of 3 millimeters at the points (obtuse points or cones). For simultaneous apprehension the "bridges" or "distances" measuring less than 3 millimeters were too short. Motions of touch consuming time—successive apprehension of the points—were required which made rapid reading impossible. For the *simultaneous* apprehension of several obtuse points by the blind, the "distance"[1] between the points should be 3 millimeters.

[1] In the following the term *"distance"* has been used for short, to indicate the distance at which two raised points of the type for the blind can be felt by the finger as *two*, and not as *one*.

That is the result of many years' experience at the institutions for the blind. Measurements by the compasses, in order to find the uttermost limit, *i. e.*, the shortest distance at which two points can be apprehended by the touch as two points and not as a single one, had been taken with but very few blind, or one individual only, by Weber, Czermak, Goltz, Gärttner, Goldschneider, Uhthoff, Hocheisen, and recently by Dr. Th. Heller.

American physiologists have also examined the sensorium of two deaf-blind, Laura Bridgman and Helen Keller.

In these last mentioned cases experiments were made with only one person. Furthermore, all these measurements have been taken with very primitive instruments, ordinary compasses, which could not furnish any data *concerning the strength of the pressure which after all has a decided influence on the result* (since the number of erroneous observations increases with the increased pressure.—Griesbach.) And yet, general conclusions have been drawn from this limited and partly unreliable material!

Whilst all the older investigators still speak of the great superiority of the sense of touch of the blind over that of seeing persons, Uhthoff admits, in a somewhat timid way, that in *one* person whom he had examined, and Heller, that in several persons examined by him (he principally speaks of two), without publishing exact results, there is "a not very perceptible sharpening of the sense of touch." He adds—and we quote his own words: "As the experiments made by means of compasses are as unsatisfactory as the former experiments regarding the sense of space, I refrain from publishing the data obtained." We, therefore, do not learn on what his timid assertion regarding the "not very great superiority" of the blind is based. In Helen Keller, likewise, nothing important in this respect was discovered.

So far, therefore, no definitive results have been obtained, nor could be obtained, because the measurements were limited to *too small* a number of persons, and *had been taken with unsuitable instruments.*

I was, therefore, exceedingly pleased when three years ago Prof. Dr. Griesbach, President of the German Association for school-hygiene, requested to be permitted to take a series of measurements on the pupils of our institution, with the view to institute a comparison between the strength of the sense of touch in blind and seeing persons of the same age.

When in a slightly doubting manner he spoke of the "vicariate

of the senses," and the alleged superiority of the senses of touch, hearing, and smell in the blind over those of seeing persons, I told him plainly that, after my experience, I had no faith in these assertions, and that most blind would hardly distinguish the two points of his æsthesiometer at distances of less than 2 millimeters, as two separate sensations, by the point of the reading finger.

Prof. Dr. Griesbach, therefore, entered upon his investigation without a firm faith in the old dogma of the vicariate of the senses, but also without the intention to destroy it. I placed all our pupils at his disposal, and let him select the persons on whom experiments were to be made, so as to avoid all suspicion of my influencing the result by selecting pupils with a specially fine sense of touch or pupils who were not very bright. As he did not know any of them, he actually selected pupils of greatly varying capability, mostly those who had not yet begun to receive instruction in a trade, but who, outside of the common instruction received instruction only in some manual labor, or in music.

By means of his new æsthesiometer—with parallel pins on springs—he examined the spaces (the smallest distances at which impressions of two points can be felt as two sensations) on the forehead, the cheek bone, the point of the nose, the lips, the thick part of the thumb, and the points of the forefingers of both hands.

By means of Zwaardemaker's olfactometer observations regarding the sense of smell were taken in the long rope-walk, in the corridor of the female department, about 40 meters long, regarding the distance at which sounds can be distinguished, and in our garden, by means of the angular mirror (Winkelspiegel), regarding the localization of the direction of the sound.

For the sake of comparison, pupils of the public schools of Mülhausen of the same age were examined in exactly the same manner as the blind. The results of thousands of observations were entered in eighty-nine tables, in such a manner as to place the blind side by side with the seeing.

I. Distinguishing the Direction of the Sound.

At the celebration of the jubilee of the institution for the blind at Lausanne, the well-known oculist, Prof. Dr. Marc Dufour, made the statement that, according to his observations, blind persons were better able than seeing ones to indicate the direction of the sound, and in connection therewith asked the question whether it would not

be advisable to appoint blind persons on vessels, for accurately determining in foggy weather the direction of signals made by other vessels or the location of landing places, as they could do this more accurately than seeing persons. Without furnishing any data relative to the method of observation employed by him, he states that the 19 blind examined by him, in indicating the direction of the sound made only 6 per cent of mistakes, whilst the seeing ones made 13 per cent.

He did not inform us under what conditions these observations had been made, and what had been the number of observations leading to the above result. Griesbach has thoroughly examined 28 seeing and 28 blind persons. Nine experiments were made with each one of these 56 persons, three of each on one ear (whilst alternately the other was closed up with moistened cotton), and three each on both ears.

Three perfectly faultless observations were furnished:

(*a*) With the left ear: 1 seeing person, no blind.

(*b*) With the right ear: none.

(*c*) With both ears: 3 seeing persons, 1 blind.

The average error as regards the left ear was 16° 23″ in the blind and 17° 9″ in the seeing ones; difference in favor of the blind, 0° 46″.

As regards the right ear: Blind, 19° 53″; seeing persons, 17° 40″; difference in favor of seeing persons, 2° 13″.

As regards both ears: Blind, 11° 47″; seeing persons, 10° 7″; difference in favor of seeing persons, 1° 40″.

The average of all the observations shows for the 28 blind an average error of 15° 35″, and for the 28 seeing ones, 15°.

In 252 observations the blind have indicated the direction of the sound correctly 68 times and the seeing 82 times.

Better results were obtained, with the exception of two persons—one seeing and one blind—with both ears than with one ear.

Therefore, as regards distinguishing the direction of the sound, no essential difference could be shown between the seeing and the blind, though there was an infinitessimal difference in favor of seeing persons.

II. Distance at which Sounds can be Distinguished.

The very extensive Tables XVIII-LXXI, mostly extending over two pages each of Griesbach's work, furnish data regarding the dis-

tance at which sounds can be distinguished, the acuteness of the sense of smell, and the acuteness of the sense of touch, in seeing and blind.

The examination relative to the distance at which sounds can be distinguished by seeing and blind took place in long corridors. Numbers from 1 to 100 and words of one syllable were spoken in a sharp whispering tone of voice. In this manner 49 seeing and 19 blind were examined. Several blind had been *excluded* from the *examination* because their organs of hearing could not be considered as normal.

The blind who could hear best could distinguish words with one ear at a distance of 45 meters (1 meter = 39.37 inches), and with the other ear at 40 meters; but a seeing person showed almost the same results.

The average distance at which sounds could be distinguished was in 19 blind and 49 seeing, right and left ear, exactly 26 meters.

This proves that the sense of hearing has gained nothing by the loss of sight.

The *musical* ear has nothing to do with the distance at which sounds can be distinguished. Nevertheless, there are men hard of hearing who can hardly distinguish human speech, because they hear only the vowels but not the consonants, and who still accurately distinguish musical sounds, even if they sound fainter to them than to persons with a normal sense of hearing. But the faintest musical sound is still "louder" than a (mute) consonant. The cortical organ of the inner ear, which is the intermediary for distinguishing the degrees of sound, is entirely independent of the eye, as independent as is the piano of the spectacles of the player. But no experienced teacher of the blind, who has to instruct many musical blind, will maintain that the musical ear of the average blind is naturally superior to that of the average seeing person. Only more care is taken in institutions for the blind to develop any talent, by imparting instruction in music to all the pupils, and by not dispensing with this instruction until all attempts have failed.

III. The Acuteness of the Sense of Smell.

This was measured by means of Zwaardemaker's olfactometer, which is described in Griesbach's work.

A glass tube encloses a rubber tube, and this again a glass tube of the same length, with a handle (smelling tube). As long as the

rubber is covered by glass on the outside and inside, no smell can be noticed.

If you pull out the "smelling tube" one centimeter, an equal length of the rubber tube in the inside remains uncovered, and imparts to the air in smelling (at the handle of the tube) a peculiar smell. In proportion as the smelling tube must be pushed out more or less, until the smell is noticed, the organ of smell is more or less sensitive. It can consequently be defined according to the length of tube pulled out.

Both nostrils were examined.

In 20 blind the tube had, on an average, to be pulled out, for the left nostril 1.56 centimeters and for the right nostril 1.94 centimeters, before the smell of the rubber could be noticed. In 40 seeing persons 1.16 centimeters sufficed to bring about this result, and in 24 other seeing persons 1.14 centimeters.

As regards the blind, the average is therefore 1.75 centimeters; as regards the seeing persons, 1.15 centimeters. Difference in favor of the seeing, 6 millimeters.

IV. Acuteness of the Sense of Touch.

We now get to the main point, the sense of touch, to which, in the blind, the most incredible magic powers are ascribed. It probably has never been asserted that the blind could smell or hear colors, but very often that they could distinguish them by the touch. And still the one would not be more marvelous than the other.

The question was, therefore, to ascertain at different parts of the body at what minimum distance two simultaneous pricks of the pin can be distinguished as two different sensations, and not as one. As I said above, the observations were taken by means of Griesbach's new æsthesiometer (parallel pins or springs with nonius).

The observations extended to the forehead, the cheek-bone, the point of the nose, the lips, the thick part of the thumb, and the points of both forefingers. The observations were made partly on holidays, partly after school hours, partly after instruction in manual labor, and extended to 37 blind and 56 seeing.

First, 10 blind and 15 seeing were examined after mental work (instruction). The distances between two points at which they can be felt as two by the touch showed the following averages in millimeters:

I.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind.....	4.5	4.9	1.86	1.72	4.8	1.49	1.91
Seeing	4.2	4.4	1.55	1.36	4.1	1.36	1.38
Difference in favor of the seeing.....	0.3	0.5	0.31	0.36	0.7	0.13	0.53

The seeing, therefore, showed a finer sense of touch than the blind. As regards the forefinger of the right hand, which specially interests us, the difference is 0.53, therefore more than one-third of the total of the seeing.

The examination of 15 blind and 15 seeing on holidays showed the following results, in millimeters:

II.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind.....	3.6	3.7	1.7	1.5	3.77	1.29	1.55
Seeing	2.46	2.59	0.85	1.01	2.41	0.72	0.65
Difference in favor of the seeing.....	1.14	1.11	0.85	0.49	1.36	0.57	0.90

Here the difference is still more striking, as in the thick part of the thumb it amounts to almost 1½ millimeters, and at the forefinger of the right hand to 9/10 millimeters. *In order that the blind might, with the forefinger of the right hand, alleged to possess a particularly acute sense of touch, feel two points as two and not as one, the points had to be put at twice the distance (1.55 instead of .65) as for the seeing.*

The examination of 16 blind and 19 seeing after labor of several hours in the workshop (2 to 2½ hours for the blind) showed the following results (averages), in millimeters:

III.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind	5.97	5.84	2.275	2.0	6.0	1.7	2.0
Seeing	4.20	4.40	1.50	1.32	4.43	1.5	1.4
Difference in favor of the seeing	1.77	1.44	0.775	0.68	1.57	0.2	0.6

The same striking difference! Measurements as regards 15 blind and 13 seeing (excepting only one) in free time showed the following results, in millimeters:

IV.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind	3.2	3.2	1.5	1.4	3.15	1.2	1.37
Seeing	2.5	2.5	0.9	0.9	2.93	1.1	1.15
Difference in favor of the seeing	0.7	0.7	0.6	0.5	0.22	0.1	0.22

Also in this case the proportion does not change very much. Seven blind (ages 12-16 years) after manual labor—plaiting—and 7 seeing of the same age after *labor in workshops,* showed the following results, in millimeters:

V.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind.	5.5	6.1	2.20	1.8	5.6	1.51	1.77
Seeing	4.1	4.5	1.67	1.4	4.6	1.41	1.30
Difference in favor of the seeing	1.4	1.6	0.53	0.4	1.0	0.1	0.47

Likewise after mental work:

VI.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind	4.3	4.7	1.9	1.8	4.9	1.49	2.01
Seeing	4.3	4.6	1.71	1.47	4.2	1.3	1.3
Difference in favor of the seeing		0.1	0.19	0.33	0.7	0.19	0.71

The examination of 2 blind girls and 2 seeing servant girls of the same age has (as regards the blind on holidays) shown the following results, in millimeters:

VII.

	Forehead.	Cheek-bone.	Point of the nose.	Lips.	Thick part of the thumb.	Left fore-finger.	Right fore-finger.
Blind	3.75	4.0	1.75	0.5	2.5	1.12	1.75
Seeing	2.75	3.25	1.25	1.35	3.5	0.8	0.8
Difference in favor of the seeing	1.0	0.75	0.50	0.15	1.0	0.32	0.95

Here the difference is still more striking, especially because the two blind girls had particularly fine, delicate fingers, and had, in addition to the usual instruction, been employed only in knitting and similar work, whilst one of the two seeing girls served as chamber-maid, and had evidently, when living in the country, worked in the fields. The spaces, as regards the right forefinger of the blind, are more than twice the size of those of the seeing! But entirely incomprehensible—from the point of view of the old dogma—were the results of an examination of two deaf-blind girls, one of whom, Magdalena Wenner, reads fluently, and finds her way on the map better than many pupils endowed with all their senses.

If nature really compensated with the one hand what it takes with the other, the three senses which these girls still possessed should have been extraordinarily strengthened; and still we find in them the most unfavorable results, i. e., not the least acuteness of the sense of smell (3.5 and 2.75), but also the largest spaces, viz:

M. W. (after instruction).....	7	7	4	3.5	1	2 5	3.5
" (on holiday).....	5	5	2	2	3.5	1.5	2
O. H. (after knitting, etc.).....	10	12	3.5	3	8	2.5	3

Where is, in this case, the vicariate for the two lost senses? I cannot find it.

M. W. owes her very considerable accomplishments not to a compensation by nature, *i. e.,* by nature strengthening the three remaining senses, and thus compensating for the loss of sight and hearing, for even the senses of smell and touch appear in her considerably weakened. Only in consequence of her extraordinary intelligence has the difficult labor of her educators borne rich fruit.

Tables LXXII and LXXXIX of Griesbach's work show the results of about 3,000 experiments made on seeing and blind, with the view to ascertain the frequency and direction of the so-called "erroneous observations." As these observations are only very slightly connected with the vicariate of the senses, I can pass them over, all the more as there does not seem to be any difference in this respect between the seeing and the blind. We therefore return to the tables showing the acuteness of the sense of touch.

They show everywhere greater distances between the points (Schwellenwerte), therefore a less acute sense of touch in the blind than in the seeing; and the difference is particularly striking in the right forefinger. Whilst the average difference in favor of the seeing is 0.24 millimeters for the left forefinger, it is 0.90 for the right.

If we now compare these figures with those of the blind, we find 1.66 millimeters for the left and 2.02 millimeters for the right forefinger.

On holidays these distances go down to 1.20 and 1.50 millimeters, respectively. *As a general rule the right forefinger of the blind finds its way less perfectly than the left, whilst there is no such difference in seeing persons.* Only in 4 of the 37 blind examined we find larger distances for the left than for the right; *they were persons who generally or exclusively read with the forefinger of the left hand.*

In 10 others the distances for the left and right forefinger are the same. Such blind *read with both forefingers,* letting the one immediately follow the other; or they have entered the institution late, have barely learned to read, and take no pleasure in it. With all the others, who *principally* read with the right hand (in copying all read with the left, and write with the right hand), the distances are *greater for the right than for the left hand.*

Unfortunately, not *all* the fingers were subjected to an examination. It is probably that for all non-reading fingers we would find shorter distances than for the forefingers.

The "reading-finger," the capabilities of which are so much admired by outsiders, has therefore in fact a *less* acute sense of touch than the finger which only plays the part of an assistant, and this finger is probably less sensitive than its idle colleagues. This shows that reading *blunts* the sense of touch, because the finger ends by the constant rubbing on the raised points become hard and *leathery,* because the epithelium becomes thick. The best readers who read almost as fast as seeing persons, show distances for the reading finger of 2, 2.6, and even 3 millimeters (Griesbach's Tables LV, LIX, LI, XXVIII).

They therefore appear as being hard of touch, considering that in the seeing who were examined and who do not read books printed for the blind, the average distance for the forefinger was only 1.1 millimeter. The blind in whom the distances approach those of seeing persons, *i. e.,* are less than 1.5 millimeters, read as a rule little and poorly (LVII, XL, VII, XLIV, etc.), or at least not as well as those who have a harder sense of touch. *It is not rough manual labor which spoils the sense of touch,* as has been maintained, for those who required the shortest distances, 0.5 and 0.8 millimeters (XLVII and LVII) were *basket makers.* Both of them read poorly, although they are very intelligent.

The question now arises: Why can seeing persons with an "acute sense of touch" not read books for the blind, or can only decipher them with difficulty, whilst the blind with a much less acute sense of touch read so fluently that you might think they were reciting?

The present type used for books for the blind (the Braille-type) consists, as has already been stated, of raised conical points, 2¼-3 millimeters distant from each other. (I have already stated that the distance between the points below 3 millimeters has been abandoned in Germany and Austria.)

The forms are as follows: ⠿ = é

a	b	c	d	e	f	g	h	i	j

For the second series of ten letters one point is added below in the first perpendicular row:

(*a* + ⠂ = *k*; *b* + ⠂ = *l*; *c* + ⠂ = *m*, etc.)

k	l	m	n	o	p	q	r	s	t

For the third series one point is added below in the second perpendicular line:

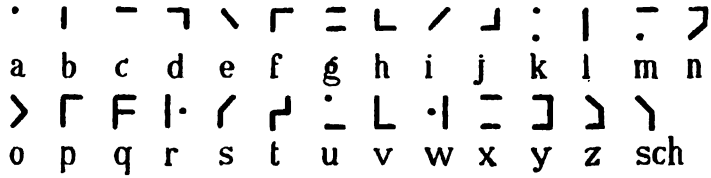
(*k* + ⠂ = *u*; *l* + ⠂ = *v*; *n* + ⠂ = *y*; *u* + ⠂ = *z*)

⠺ *W* is *r* reversed ⠗

u	v	x	y	z

In the books the distances of the letters from each other are hardly greater than the distances of the points of one and the same letter from each other, *e. g.*, ⠍ = *nur* (German for "only"). The tip of a finger 15–17 millimeters broad, therefore, in the preceding word "*nur*" covers, when its central part rests on the "*u*," not only the "*u*" but also the second perpendicular row of the "*n*" and the first perpendicular row of the "*r*" ⠗ As the end of the finger is round below, , the points of the "*u*"

lying in the middle will impress themselves deeper into the finger end and affect it stronger than the points of the letters on either side "*n*" and "*r*." *A finger having a very acute sense of touch will also feel the weaker impression of the letters on either side and mix up the letters, i. e.*, not know which points belong to one and the same letter, whilst a finger not possessed of *so acute a sense of touch will hardly take notice of the weaker impressions* produced by the letters on either side. In order to prevent such mistakes, which make the requirement of reading very difficult if not impossible to persons who have become blind later in life, I have had a book printed where, for the benefit of such blind, relief-*line* types have been used, combining or uniting the points to make figures:



But we find in Griesbach's tables in 33 blind out of a total of 37—but only in 5 seeing out of a total of 56—the observations, "If the impression is weak, there is no sensation of touch;" or "if the impression is below 2, below 5 g, the blind can make no exact statements as regards the sensation of touch," etc.

This discovery—*and it is decisive*—we owe to Griesbach's æsthesiometer working on springs. With the ordinary compasses which were formerly used in the few measurements that were taken this fact *could not be ascertained.*

The four blind, concerning whom we find no such observations, had not made much progress in reading, *i. e.*, they had only read when they were obliged to, or had just begun to learn reading. The epithelium of their forefingers had, therefore, not yet become thick. We find among them again case XLVII, which shows the shortest distances (left, 1 millimeter; right, 0.5 millimeter).

I must here insert the remark that the ability to read by no means furnishes a standard for skill or talent for manual labor. The best readers are, as a rule, the worst workmen.

From what has been said above, it appears beyond a doubt that for learning to read with the fingers, the sense of touch should not be rendered very acute, but it needs rather to be blunted.

A seeing person cannot read books printed for the blind, *for the reason* that he receives too lively an impression of the points *on either side,* therefore *feels too much.*

An Italian physician, Dr. Ferrai, has recently in examining some deaf ascertained that the acuteness of touch increases with age. Up to what limit, he does not say.

A person who thoughtlessly, or wrapped in deep thought, wanders through the streets of a populous city, "sees" the surging crowd before him, to the right and to the left, and after all has not seen anything properly, because his field of vision was too extended, because he could not fix any one impression. A finger possessed of an acute sense of touch experiences the same when brought in contact with the swarm of points of the type for the blind, whilst the blunted reading finger may be compared to the weakened sense of hearing which only hears the blasts of the trombones and the thumping of the kettle drums in a full orchestra. Practice makes perfect, and practice in our case means nothing less than the thickening of the epithelium, and the weakening of the sense of touch connected therewith, *presuming the degree of acuteness of the sense of touch can be determined by æsthesiometric measurements.* I feel sure that this assertion will in those large circles which cannot tear themselves away from the dear old faith, be considered as heresy. But its correctness is proved beyond the shadow of a doubt by Griesbach's experiments and my knowledge of the blind on whom these experiments were made. It is also confirmed by the fact that when the blind want to distinguish dry goods—silk, wool, cotton—they do not, as a rule, use the reading finger as the organ of touch.

I will candidly confess that not a very long time ago I considered the best readers as possessed of a particularly acute sense of touch, and that I felt like *a burglar in a church when I first penned with a palpitating heart the above statements.* I had never been able to explain to my own satisfaction why the best readers generally show no skill in manual labor, and even show themselves clumsy in the common acts of everyday life.

Not until I critically examined Griesbach's tables were my eyes opened.

I only regret that the measurements were not extended *to the ends of all the fingers of both hands, and to persons of greatly differing age.* This *must* be done at some future time, so as to corroborate the results gained so far.

This omission has since been corrected. During the Whitsun-

tide holidays of 1902, Griesbach took measurements on 2 blind and 3 deaf in the Institution for the deaf and blind at Weimar, and this time extended his investigations to *all fingers.* The results, which reached me only a few days ago, are as follows:

Born blind; age 12 and 13; figures express millimeters:

	Forehead.	Cheek-bone.	Point of the nose.	Thumb.		Little finger.		Ring finger.		Middle finger.		Fore-finger.	
				Left.	Right.	Left.	Right.	Left.	Right.	Left.	Right.	Left.	Right.
I. 12 years.....	5.5	8.0	4.0	2.2	2.2	1.3	1.4	1.2	1.2	2.0	2.0	1.5	2.3
II. 13 years.....	5.5	7.5	4.0	2.7	2.2	1.2	1.3	1.2	1.2	1.5	1.5	2.0	2.5
Average.....	5.5	7.75	4.0	2.45	2.2	1.25	1.35	1.2	1.2	1.75	1.75	1.75	2.4

Average of distance for all fingers: 1.745 millimeters. Average for the 7 non-reading fingers, 1.45 millimeters.

The supposition expressed by me *that the distances for all non-reading fingers must be shorter than for the reading finger has therefore been proved to be well founded.*

Deaf of the age of 10, 12, and 13 years; figures express millimeters:

	Forehead.	Cheekbone.	Point of the nose.	Thumb.		Little finger.		Ring finger.		Middle finger.		Fore-finger.	
				Left.	Right.	Left.	Right.	Left.	Right.	Left.	Right.	Left.	Right.
10 years.....	8.5	12.5	4.5	2.5	2.5	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.2
12 years.....	8.7	12.0	4.0	2.0	2.0	2.2	2.2	2.5	2.5	2.2	2.3	2.0	2.0
13 years.....	8.5	10.5	3.5	2.5	2.5	2.5	2.2	2.5	2 5	2.3	2.2	2.5	2.5
Average.....	8.23	11.7	4.0	2.33	2.33	2.23	2.13	2.33	2.33	2.23	2.23	2 23	2.23

Average distance for all fingers, 2.26 millimeters.

It should be stated that these observations were taken during the vacation and that the pupils were not hard worked, either mentally or physically, prior to the vacation.

Whilst with the deaf there is *no essential* difference of distance for the different fingers (the average varies between 2.13 and 2.33), we find for the reading fingers of the blind distances of 2.4 millimeters, whilst the non-reading fingers, apart from the thumb, show an average distance of only 1.44 millimeters. According to Table IV, the latter approaches that of the seeing for both forefingers (1.3 mm.).

These measurements show furthermore that the deaf, by losing their hearing, have not gained anything as regards the acuteness of the sense of touch, but that, on the contrary, they have lost a great deal.

And this people called a vicariate of the senses!

One might be tempted to believe that I underestimate the value of the sense of touch and the capability of the blind. After the labor of more than twenty years with and for the blind, I think I do not deserve this reproach, if it ever should be made. I know from experience that today we are able to raise the normally endowed blind, also as regards scientific attainments, to the level of the seeing of the same age; and that, as regards technical acquirements and skill in those trades which are open to them, they are very little behind the seeing. The sense of touch accomplishes *much more* and *much less* than outsiders generally imagine. Usually the blind are considered as sorcerers and idiots at the same time. They are neither the one nor the other, but human beings with reduced strength (for, where one member suffers, all suffer), but who, by a *careful education,* by *diligence* and *perseverance,* not through magic power, are able to a great extent to recover of what nature has deprived them. How erroneously the blind—and the sense of touch in general—are judged even by prominent men of science, is shown by the words of a man like Wundt, quoted by Griesbach; Wundt is of opinion that the sense of touch which always remained at a low grade of development in the seeing, reaches a development in persons born blind "which, as regards the acute power of distinguishing, rivals the regions of indirect sight of the sides of the retina." (Wundt: Menschen- und Thierseele, p. 167.)

That is by far too much and by far too little! When we walk through a street or through a forest and look straight ahead, we involuntarily see with the sides of the retina to the right and the left, above and before us, millions of objects in *indistinct outlines* which are not accessible to the sense of touch of the blind. But those objects which are placed in the hands of the blind, and are enclosed by

them, are grasped by the sense of touch *as they are and not as they seem,* whilst to the eye, when we move round about them, they assume different forms from second to second, because the eye only sees perspectively and by projection. A globe is and remains to the feeling hand a globe, but to the eye it is an unevenly lighted flat circle. A suitably shaded circle in a drawing therefore produces an optical illusion, and appears to the eye, on the strength of numerous experiences of the sense of touch, as a globe.

Spherical bodies which are not accessible to the sense of touch have, therefore, for thousands of years been considered by men as circular disks—the moon, the sun.

Some years ago I received from Vienna a number of intagliated plaster casts of relief medallions of historic personages. After inspecting them for some time, it suddenly struck me that at one time I saw them intagliated and then again in relief. To obtain the certainty that this deception was not simply caused by a peculiarity of my eyes, and also with the view to convince some seeing persons of the fallibility of sight, I placed these plaster casts against the wall, so that they could be seen in front from some distance, but could not be touched.

I then called two of my seeing colleagues and showed them the beautiful "relief casts." They shared my admiration, and did not notice that something was wrong until I laughingly asked them to take a little closer look. Then of course they discovered that these casts were made in entaglio and not in relief. They would of course not have made the mistake if they had thought of the direction of the light, *i. e.,* the location of the window. I made similar experiences in innumerable cases, when for some time I looked steadily at the back (the hollow side) of my zoological relief objects. The sense of touch will never make such mistakes. A blind person with a practiced sense of touch, who carefully goes over an exact model of the Vosges mountains or the Alps, gets a much more correct and "more plastic" *total impression* of these mountains than a traveler who by rail travels a thousand times from Basel to Strassburg, or passes through the Alps, but who only gets a side view of the mountains (in projection on a vertical plane), and never from above (in projection on a horizontal plane [map]) as a whole. Only the impressions are of a different kind.

Impressions received by the sense of touch cannot be compared with impressions received by the sense of sight. They are as different from each other as painting and sculpture, but, like these, of

equal value. The seeing person can do a thousand things which a blind person could not do; just as the blind can do many things which the seeing could not do in the dark, because every conscious action or labor is a result of the mental life which, as far as space is concerned, in the seeing is mainly built up by impressions from light, but in the blind by impressions from touch (attempts to see by persons born blind, on whom an operation has been performed). The eye from a suitable distance takes in the largest and smallest objects as a whole, and only afterwards analyzes them; the sense of touch does not take in very small objects; and those which are so large that they cannot be enclosed with the hand or show complicated forms it only takes in *gradually.* The sight as such furnishes *groups* of impressions, whose component parts lie side by side in a plain; the sense of touch furnishes, as far as larger objects are concerned, a *series* of impressions, the parts of which follow each other in order of time, and which are only grouped by a psychical act (synthesis). Sight is the sense of plains, touch the sense of bodies.

A person blind from birth can easily have correct impressions of bodies, whilst it is much more difficult for him to get an impression of a plain. A "*touch*-blind person, born as such—I don't know whether there are such persons—would probably by means of sight get a correct impression of plains, but no impressions of bodies. In a person endowed with all his senses impressions from sight and touch blend to one grand total impression comprising both plains and bodies; so that impressions by sight also reproduce closely related impressions by touch, *i. e.,* impressions of bodies, and *vice versa.* When we "see" the *front* of a house, *i. e.,* when we perceive the waves of light which are reflected from this front, we say: "I see the house," because we no longer separate the impression of a body produced by the sense of touch from the impression of a plain. Sight and touch, which belong together, but which according to their nature are intended to receive totally different impressions of the outer world, may therefore supplement each other, but never *take each other's place.* There can, therefore, not be any vicariate of these two senses, although they are so close to each other that sight has frequently been termed "touch from a distance." Much less can hearing take the place of sight, for these two senses are totally different.

Hearing alone cannot produce any impressions of space, although it can locate the direction of the sound with tolerable accuracy. The distance of the source of the sound is not determined by

the ear itself, but is estimated—in most cases very inaccurately—by the strength of the sound. But the impressions of space, on which this estimate is based, have been gained by sight and touch.

The blind person, of course, gets his defective impressions of larger spaces by the sense of touch, when the feet as organs of touch in connection with the "sense of the muscles" (Muskelsinn)—length of the steps—are taken into consideration. But these two senses do not furnish direct impressions of space, but only material for such. Here likewise intelligence has to come in as the formative power by the aid of numbers and time. As far as hearing is to serve the communication of men with each other, it is destined only for the perception of conventional groups of sounds (words, etc.) for impressions and ideas. It is true that only too often teachers of the blind entertain the erroneous idea that words *produce* impressions of space and of objects; there is too much talking and too little object-teaching. The former is, of course, much easier. There can, therefore, be no talk of the ear taking the place of the eye. And that the loss of sight does not strengthen and sharpen the sense of hearing, as regards space, has been proved by the locating of the direction of the sound and the distance at which sounds can be heard.

The greater attention which the blind person gives to insignificant noises, which can guide or warn him, does not seem to influence his organs of hearing. The attention is a psychological and not a physiological element.

The view that the loss of one sense, of itself and always, *i. e.*, by natural necessity, strengthens the other senses; that, for instance, the energy having, so to speak, become disposable by the non-use of the nerves of sight, passes over to the nerves of the other senses, just like the property of a dead child passes to his brothers and sisters and increases their possessions, has by Griesbach's investigations been shown to be erroneous—as far as smell, sight, and touch are concerned.

He states the following in his conclusions (16), which I here give in full:

1. In the faculty of distinguishing impressions produced by touch, there is in general no essential difference, as regards the time free from labor, between blind and seeing; small differences speak in favor of the seeing.

2. In persons blind from birth the acuteness of the sense of touch is somewhat less than in seeing persons; in a few cases the rest of the sensorium also suffers in persons blind from birth.

3. The blind have a less acute sense of touch in the tip ends of the forefingers than the seeing; and in the blind, in many cases, there is a difference between the two forefingers, as regards the faculty of receiving impressions.

4. The blind need, especially as regards the hand, a stronger impression than the seeing if a distinct impression of touch is to be produced.

5. In the power to locate the direction of the sound there is no difference between blind and seeing.

6. The ability to locate the direction of the sound varies in the blind as much as in the seeing, and in both is to a very great degree shaped by the individuality of each person.

7. As a general rule, the direction of the sound is determined by the blind and seeing more accurately by hearing with both ears than only with one ear.

8. There is no difference between the blind and seeing as regards the distance at which a sound can be heard and located.

9. There is no relation between the distance at which sounds can be distinguished and the ability to locate them, either in blind or seeing.

10. There is no difference between the blind and seeing as regards the acuteness of the sense of smell.

11. The blind to a greater degree get tired by manual labor than the seeing of the same age.

12. The blind of the same age get tired quicker by manual labor than by mental work; this is not the case with the seeing of the same age.

13. There is no essential difference in the degree of tiredness by mental work between the blind and seeing of the same age. Slight differences speak in favor of the seeing.

14. Both among the blind and seeing there are persons without, with few, and with many erroneous observations. In examining the various parts of the skin, most of these erroneous impressions are received by the cheek bone; very few by the ends of the fingers.

15. The number of erroneous impressions, both in the blind and seeing, increases with the increasing number of irritations (Reize) and increased pressure.

16. Sharp points often produce in blind and seeing erroneous impressions more frequently than blunt points, etc.

Professor Griesbach has expressed himself with the utmost caution in these conclusions, probably with the view not to be considered

as a prejudiced opponent of the general opinion; for it is a fact that his tables as to *acuteness of touch* and ability to locate show a very considerable superiority of the seeing; in the forefinger of the right hand this superiority varies between 0.42 and 0.90, or applied to the average "distances" of the seeing, between 40 per cent and 138 per cent. (Figures in the table express millimeters):

		Seeing.	Blind.	Difference.	Per cent.
Table LX and Table LXII.	Holiday	0.95	1.37	0.42	44
Table LIX and Table LXI.	Manual labor..	1 40	2.0	0.60	43
Table XLII.....	Holiday	0.65	1.55	0.90	138
Table XLII.....	Mental work...	1.36	1.91	0.55	40

These are the "small" differences in favor of the seeing!

In looking over these figures, we are involuntarily reminded of the words of Scripture: "Whosoever hath, to him shall be given, and he shall have more abundantly; but whosoever hath not, from him shall be taken away even that he hath."

Griesbach's conclusions Nos. 11 and 13 deserve a closer examination.

No. 11 agrees with the results of the measurements, but it has not the significance which could be assigned to it, and which has been assigned to it. The conclusion reads: "The blind, to a greater degree, get tired by manual labor than seeing of the same age."

According to Table LXII, the total "distances" of *seeing*, examined in *free* time, therefore, under normal conditions, amounted, in millimeters, to $2.5 + 2.5 + 0.9 + 0.9 + 2.93 + 1.1 + 0.95 = 11.78$.

In a state of tiredness after manual labor (Table LXI) we find for the *seeing*: $4.2 + 4 + 4 + 1.55 + 1.32 + 4.43 + 1.5 + 1.4 = 18.70$.

The difference between the normal and the tired condition therefore amounts to 6.92 millimeters or 59 per cent of the normal length of "distances." The *coefficient of tiredness, i. e.*, the figure by which the normal figures would have to be multiplied to find the degree of tiredness, is 1.587.

In the *blind* the total of the "distances" in *normal conditions, i. e.*, of rest, is, according to Table LX, $3.2 + 3.2 + 1.5 + 1.4 + 5.15 + 1.2 + 1.37 = 15.02$, whilst the total of "distances" after work in a workshop, according to Table LIX, is: $5.97 + 5.84 + 2.275 + 2 + 6 + 1.7 + 2 = 25.78$.

Difference between normal and tired condition: $10.76 = 71.7$ per cent.

Coefficient of tiredness: 1.716.

The difference is, therefore, not very great, and is caused by the prolongation of the "distances," already long, as regards the forehead, cheek-bone, and thick part of the thumb. *After mental work* the proportion is reversed in a very striking manner. Conclusion No. 13 does, therefore, *not* agree with the figures.

For the *blind* the total of the "distances" in normal conditions is, according to Table XXXVI, $3.6 + 3.7 + 1.7 + 1.5 + 3.79 + 1.29 + 1.55 = 17.13$.

After mental work, Table XXXV: $4.5 + 4.9 + 1.86 + 1.72 + 4.80 + 1.49 + 1.91 = 21.18$.

Difference between normal and tired condition, $4.05 = 23.6$ per cent.

Coefficient of tiredness: 1.236.

For the seeing (Table XXXVIII):

Normal condition of rest: $2.3 + 2.4 + 0.9 + 0.9 + 2.4 + 0.83 + 0.8 = 10.53$.

After mental work, Table XXXVII: $4.2 + 4.4 + 1.55 + 1.36 + 4.1 + 1.36 + 1.38 = 18.35$.

Difference: $7.82 = 74.2$ per cent.

Coefficient of tiredness: 1.743.

Strange to say, the percentage for the seeing is three times as large as that for the blind, whilst it says in No. 13 of Griesbach's conclusions that there is no essential difference, and that there are slight differences in favor of the seeing.

This phenomenon can hardly be sufficiently explained by physiology; some psychological elements will have to be brought in and taken into account. It can only be explained by the closer attention of seeing pupils (many blind are inclined to indulge in day dreams), possibly also by a tiredness of the eyes, which, *e. g.*, in writing, are actively engaged as well as the hand, whilst the blind, in writing from dictation, or from memory, properly speaking, exercises no organ of sense, but simply the muscles of the forearm.

For the present it will be well not to draw general conclusions from these figures, because at this time it is impossible to state accurately what instruction preceded these measurements.

Under all circumstances, nothing that has been stated can be cited in support of a vicariate of the senses. Only taste and *touch*

can therefore be taken into account. Griesbach has not examined the organs of these two senses. It might be found difficult to find incitants on which the organs of these two senses react in the same manner, though to a different degree. It has recently been attempted by Italian physicians by means of the electric current and different solutions—bitter, sweet, salty. But they do not seem to have obtained any very important results; at any rate, they have not shown any superiority of the blind. To make a second examination of these results, it would, under all circumstances, be necessary to know the strength of the current, the consistency of the solutions, as well as—on account of the persistence of the sensations—the duration of the interruptions between the various experiments; and also the order in which the solutions above referred to were applied. I have never heard that the blind are considered special gourmets; for if this were so, some one would surely have proposed to appoint them on vessels not only as fog compasses, but also as kitchen inspectors. They would doubtless prefer the last-mentioned positions. Possibly from reasons of economy, people have not ascribed to them magic powers.

Nor has an investigation been made concerning the sensibility of the nerves of the skin as regards differences of temperature and resistance of the atmosphere. Possibly it would pay to supplement the ingenious experiments of Th. Heller.

It is well known that totally blind persons who move about freely in comparatively rare cases bump their head against anything. Our pupils play and run about almost like seeing children in the yards and gardens, where there are many trees, and which are mostly enclosed by walls or buildings. Of course, occasionally they run against something—this world was not made specially for blind people—but as a rule they "notice" the hindrance and get out of the way in time. It was thought that this fact, known for a long time, could not be explained by the use of the known senses, and the necessity was felt to ascribe to the blind a seventh sense—"the sense of distance." For more than a century mystic speculations regarding this (non) sense have produced fantastic and many-colored blossoms, but no fruit. In reality, as Th. Heller has also shown, the question is only to use the well-known senses attentively, more especially the capability of touch of the skin of the face (sensation of pressure) and of the sense of hearing. Differences of temperature and the sense of smell are occasionally made the subject of observations. The blind themselves cannot tell how they notice im-

pediments in their way before they touch them; all they can say is that they "feel" them. But they become uncertain and clumsy if, from some reason or other, they must be "blindfolded," or when the ground is covered with snow (or with some other matter which weakens the sound). As soon as there is snow on the ground, even those who know the court best will lose their way in it. How can the fact be explained that to cover up the "eyes," and possibly a part of the forehead, weakens the assurance of the blind? Is the only cause this: that a portion of the skin of the face is covered and that, consequently, the space exposed to the air is *diminished? Experiments* relative to these questions *would have to* be made in the *air bath,* where therefore there would be a much *larger space of exposed skin.* Or is it possible that the nerves of sight, not yet completely dead, play a part in this matter?

Is it not possible that these remnants of the nerves of sight are more sensitive to differences of temperature and to the suddenly increased resistance of the air than the nerves of the skin? (As a teacher of the blind, I address these questions to medical men.) It is evident that in rapidly approaching an impediment—tree or wall, etc.—a temporary condensation of the atmosphere, respectively a back current, is created. Every sharpshooter knows how his rifle rebounds when he aims at a firm, if even distant, object. Even the leafless branches of a tree or shrub increase the resistance. Do the seeing feel such a pressure of the air when rapidly approaching an impediment as certainly as the blind? (In slow approach, even, the blind person runs against objects much easier.) The question remains open, however, whether we are confronted with a superiority of the blind in a *physiological* sense, or whether the psychic element of greater attention on the part of the blind produces the difference. I am inclined to believe the latter.

The sound of steps which changes in the neighborhood of a wall probably has more importance as a warning signal—at least it comes sooner—than the sensations of pressure on the skin of the face. The lack of assurance which shows itself when the floor of the room is covered by a new carpet or the ground is covered with snow proves this.

The so-called "sense of distance" (Fernsinn) is, therefore, only the *sum of all the observations by the senses* which indicate to the blind and to the seeing, when compelled to take notice of it, the approach of danger; you might just as well speak of a "warning sense."

A (physiological) superiority of the sensorium of the blind over that of the seeing has so far not been proved, even as regards taste and touch. But even if experiments in this regard should prove a superiority of the blind, it would hardly be sufficient to make up for the deficit of the other senses, which has been clearly shown by Griesbach. Even then we could not speak of a general sharpening of the sensorium through the loss of one sense; otherwise the loss of hearing would act on the other senses so as to refine and sharpen them, and the loss of the two most important senses would strengthen the others in a very noticeable manner. The results of the measurements show that this is not the case in our deaf-blind. The uncertain swaying walk of the deaf-blind—they generally walk like persons who are drunk—seem to show that the sixth sense, the "sense of equilibrium," has also suffered, *i. e.*, that the *"hydrostatic balance"* (Wasserwage) in the labyrinth of the ear is out of order, which again permits a conclusion concerning the often unknown cause of deafness. Recently two Italian physicians, Dr. Carlo Ferrai, of Genoa ("Sul compenso sensoriale nei sordomuti"), and Dr. Cesare Rossi, of Como ("Sulle durate del processo psichico elementare e discriminativo nei sordomuti"), have examined a *large number* of deaf and hearing persons, and have arrived at the same result. Dr. Ferrai has examined the sense of touch, the "muscle-sense," the "sensation of pain" (caused by the electric current), the sense of smell, and the sense of taste (bitter, sweet, salty). In his "conclusioni" he lays special stress—and refers to Griesbach—on the fact that a "compenso sensoriale," a vicariate of the senses, exists just as little in the deaf as in the blind.

Dr. Rossi expresses his conviction, based on the observations and experiments made by himself and others, that, to say the least, the *strength of sight* of the deaf is not superior to that of hearing persons. He also calls to mind many cases where deafness and blindness go together.

Where one member suffers, all suffer! How could it otherwise be explained that deafness and blindness so often go together. For a number of years, 5 to 6 per cent of our blind have been also deaf; others are hard of hearing; whilst otherwise, among 1,000 persons, hardly more than three deaf (3 per 1,000) are found. This cannot be proved with absolute accuracy, because the term "deafness" is just as elastic in its meaning as "blindness." To the oculist a person is blind who cannot distinguish day from night; to the teacher of the blind, any one is blind who cannot see sufficiently to work by the

aid of the eyes. I therefore consider the statistics of the blind and the deaf as entirely unreliable as long as a fixed standard has not been established. Most parents hesitate to enter the words "blind" or "deaf" in the census blanks.

Thanks to the thorough and conscientious investigations of Griesbach and others, the dogma of the "vicariate of the senses" falls to the ground; like many another dogma which for centuries has ruled this or that science, it has had to give way to the results of scientific investigation.

And who would regret this? Those who by nature have been deprived of one or more of their senses are not benefited either by an *overestimation* or an *underestimation* of their capacities.

The ruins of the venerable building will probably for many years to come look down into the valley from the sunny heights of pedagogical and other wisdom, but finally time will also level these ruins!

THE COLLEGE OF TEACHERS OF THE DEAF AND DUMB, LONDON.

By Frank G. Barnes, Homerton, London.

To every student of the question of the education of the Deaf, the great advance made during the past thirty years in the British Isles, must be well known; but it is probable that many of the readers of the Association Review are less familiar with one of the causes which gave a tremendous impetus to that forward movement. This was the establishment in 1885 of the College of Teachers of the Deaf and Dumb.

Colleges for the *training* of teachers of the Deaf had already been established at Ealing and Fitzroy Square, London, and both these Colleges were issuing diplomas to the students who graduated; but they were private enterprises, directing their courses solely to the advancement of the Oral method, and many of the students who passed through the periods of one (or two) years' training in theory and practice afterwards became private governesses to the deaf children of better-class parents.

The great majority of the teachers of the Deaf who were engaged in the Schools and Institutions of Great Britain and Ireland at that date, however, had received their only training and experience *in the schools themselves.*

Entering as junior teachers, they had received from the principal, or some of his experienced assistants, a certain amount of instruction and guidance in their work, and after a few years had emerged from the novitiate stage to that of a full-blown practitioner.

For these junior teachers in Institutions there was a need for some means of focussing their attention on a regular course of study, and for some common "standard," in order to synchronise the varying methods of training and preparation for young teachers in the different schools.

The inception of the College was entirely due to Dr. R. Elliott, of Margate, and the late Rev. Dr. William Stainer, of London, and the preliminary stages cannot be better described than in the words of one of the founders at the first meeting of members at the City Guilds Institute, South Kensington, on Saturday, July 4, 1885:

"Mr. Elliott said it might be desirable that he should make a statement as to the ideas which had prompted the foundation of the College. Teachers of the Deaf were an isolated class. There had been very little recognition of their services. They had no status and were left to labor on with very little of encouragement or appreciation. It seemed, if possible, desirable to terminate such a state of things. And for this end it appeared to be proper to endeavor to raise the whole body of teachers into a recognized profession. Other educational bodies obtained a status from the possession of a certificate of qualification. The first step, therefore, was to organize a body of examiners to give such status to those who could show that they were in possession of the necessary qualifications. The work was of an exceptional nature and called for exceptional qualifications. Such, in the case of other special workers, were fully recognized. Of this the Royal Colleges of Surgeons and of Physicians were examples. But there was as yet no College of Teachers of the Deaf and Dumb.

"Impressed with these views, Mr. Stainer and himself sent round a circular to the headmasters of Institutions, containing a draft scheme, and asking for their hearty co-operation in the formation of such a College. This was received with all but universal favor, and produced many valuable suggestions, all of which were taken into careful consideration. It became, then, a principal object to secure the nomination of an examining body.

"Another circular was, accordingly, sent to the headmasters, with a request that they would nominate five gentlemen as examiners and committee. The result was the nomination of Mr. Elliott, Mr. Howard, Mr. Schontheil, Mr. Sleight, and the Rev. W. Stainer."

The scheme for the formation of the College received careful consideration by these appointed gentlemen, and was issued in the following form:

COLLEGE OF TEACHERS OF THE DEAF AND DUMB.

It is intended to hold the examination of this College early in July next at Stainer House, Paddington Green. Teachers who intend to sit for examination are requested to send their names, with particulars, to the registrar—Mr. Elliott, Margate—not later than the 1st of June. The following is the scheme of examination:

No certificate will be granted to any candidate who fails to give satisfactory evidence of knowledge and ability in regard to subjects marked *a, b, c, d, e, f.*

(*a*) The History of the Education of the Deaf and Dumb.

(*b*) The Principles of Education.

(*c*) The Intuitive Method of Teaching Elementary Language.

(*d*) The Method of Teaching Advanced Language.

(*e*) The practical instruction of a class (with blackboard illustrations).

(*f*) The Mechanism of Speech, with the Anatomy and Physiology of the Organs.

(*g*) The Method of Teaching Articulation.

Examination in the following will be optional on the part of the candidate:

(*h*) The making and understanding of natural signs.

(*i*) The ability to read finger spelling.

The College Certificate will specify the subjects in which the candidate has passed.

Due notice of days and hours of examination will be given.

In addition to the issue of this syllabus of subjects of examination, a list of books recommended for study was issued to the teachers intending to present themselves for the test.

For the first examination 13 teachers presented themselves, and of these 11 showed sufficient ability to be judged fitted to hold the diploma of the College, and at the first meeting mentioned above the certificate was awarded as follows.

(1) Forty certificates to headmasters of Schools and Institutions, and to other teachers who had been engaged in the work for a period of over 10 years.

(2) Fourteen certificates, awarded on application, to the teachers already in possession of diplomas issued by the existing training Colleges.

(3) Eleven certificates to the successful candidates in the examination.

The first President was Dr. John Stainer, at that time organist of St. Paul's Cathedral and one of the inspectors in music to the British government. His chief interest in the work was due to his brother, the Rev. Dr. Wm. Stainer, but he only retained the office until the young College had become firmly established. He was succeeded by Mr. Wm. Woodall, M. P., who held the office from 1887 to 1901. Mr. Woodall was one of the Royal Commission on the Education of the Deaf and Dumb, and there can be no doubt that his intimate acquaintance with the aspirations of the teachers, through the medium of the College, influenced and strengthened his efforts to make the report strongly in favor of the nationalization of Deaf education, and also to assist in the passing the act for the "compulsory" education of Deaf children in 1893.

On the death of Mr. Woodall, Mr. Sleight, of Brighton, the oldest British teacher of the Deaf, held the position until failing health compelled his retirement, and Dr. Elliott was induced to take

the proud position of President of the College, to which he had given a quarter of a century of devoted service.

Year by year the College has carried on an efficient examination of teachers, and nearly 400 teachers of the Deaf have submitted themselves as candidates and duly received the "hall-mark" of proficiency—the diploma of the College.

From the first it was intended that the examination should be no sham, and I well remember the trepidation with which young teachers went in for the practical teaching test, and the stringent *viva voce* examination which followed it.

Dr. Wm. Stainer, Schontheil, the Rev. Thos. Arnold, and the late Mr. Howard, of Doncaster, were a quartette before whom any tyro in the art of instructing the Deaf might well quake when called upon to air his knowledge—or ignorance.

The examinations have always been conducted with the utmost impartiality, and usually the written tests have been conducted in such a manner (by means of a *nom de plume,* or otherwise,) that the identity of the candidate was unknown to the person marking the papers.

Practically every teacher of the Deaf in Great Britain has been proud to possess the diploma of the College, and this diploma, with the "seal" of the College (depicting the story of EPHPHATHA, and designed by a Deaf and Dumb artist), has held a place of honor in the sanctum of every headmaster.

The second Annual Report of the College contained the following paragraph:

"Much satisfaction has been expressed by the heads of Institutions on the beneficial effects in their schools, traceable to the influence of the College, and this has given great pleasure to its promoters. The proofs that it successfully met a real want are seen in the eagerness with which its certificates and diplomas have been sought for and the importance which is already attached to them. They are regarded with marked favor by several Committees, and by the one, which is most influential, it has already been made a rule that every member of their permanent teaching staff shall possess, or must obtain, the Certificate of this College."

The Committee of the College is annually elected by the members, and from the Committee the examiners have been selected in the past. These officers at present are: President and Rgistrar, Dr. Elliott, Margate; Assistant Registrar, Mr. E. Townsend, Birmingham; Committee, Dr. W. H. Addison, Glasgow; Mr. F. G. Barnes,

officier d'Academie, Homerton; Mr. B. P. Jones, London; Mr. S. Kutner, London; Mr. A. J. Story, Stoke; Mr. A. Wright, Newcastle; Mr. A. Sleight, Brighton, and Mr. William Sleight, of Brighton, as patron of the Institution.

A few years ago it was felt to be undesirable that there should be three examinations of varying standards for teachers of the Deaf, and the Committees of the Training Colleges at Fitzroy Square and Ealing were invited to appoint representatives to discuss the question whether it would be possible to establish a "Joint Board of Examination" for the three Colleges. The negotiations for the attainment of this object took some time, but were happily successful, and this year instead of the students at the Training Colleges being examined separately by their own examining boards, and the candidates for the College of Teachers' diploma being examined by that body, *one* combined examination has been held, and thus ONE standard of attainments and qualifications has been established for future teachers of the Deaf.

The Joint Examination Board has issued a "scheme," embodying the whole of the syllabus of the College of Teachers of the Deaf and Dumb, excepting that portion referring to Finger-spelling and Signs. The Oral Association at Fitzroy Square and the Training College for Teachers of the Deaf at Ealing, being both purely ORAL organizations, it was felt that they could not combine in dealing with that subject, and the matter was compromised on the following lines: that all candidates should be examined and, if successful, certified by the Joint Board on the following subjects:

(1) History of the Education of the Deaf.

(2) Principles of Education Generally, including their special application to the Deaf, and Elementary Psychology.

(3) Mechanism of Speech and the Method of Teaching Articulation.

(4) The Method of Teaching Language to the Deaf.

(5 Anatomy and Physiology of the Organs of Respiration, of Circulation, and of Speech. The Ear. The Nervous System.

(6) Practical Teaching and *viva voce.*

And the College of Teachers' representatives should separately examine any candidate desiring to be tested in the ability to make and read Signs and use the Manual Alphabet, such efficiency to be attested by a foot note on the certificate and signed by the examiners of the College only.

The examining body of the Joint Board is to consist of three

representatives of each of the three Colleges, and it is arranged that there shall be one representative of each body on each rota of three appointed to deal with each subject of the examination.

The College of Teachers of the Deaf and Dumb has performed a most useful work in the past, and the gratitude of every British teacher is due to Dr. Elliott and the late Dr. Stainer for their foresight in conceiving the idea of the College and their executive ability in organizing it and carrying it on so long and so successfully.

Under the new arrangement the College will still exist, receive applications from candidates desiring to be examined, and if their credentials appear satisfactory, and if they conform to the regulations of age and length of experience as teachers of the Deaf, the College will then hand them on to the Joint Board to be examined.

One of the aspirations of British teachers is that when the examination of the Joint Board is firmly established it may receive government recognition, and that the day may come when there shall be no teacher on the regular staff of a school for the Deaf who does not hold a diploma as a fully qualified teacher of the Deaf.

AT THE CONSTITUTION HOUSE; OR, THE UNWELCOME GUEST.

By a Teacher.

The day clerk of the Constitution House, at Ogden, was late that morning. He was also cross; in his rush he had forgotten his diamond. With feverish haste he opened the register and pasted on the first blank page therein a label bearing this legend:

Friday, July 10, 1908.

Then he hurried home for his badge of office. During the absence of the clerk, a stranger walked up to the desk and began to finger with the ancient pens, which caused a harmless potato to assume the aspect of the fretful porcupine. Before he could decide which pen would spatter the least ink, he heard a voice at his elbow: "Do you intend to register here?"

"It seems that I have to," replied the stranger. "There is no other place for me in the city."

"Well, it is a rule of the house that no one shall be entertained here unless by the unanimous consent of the permanent boarders. What is your name?"

"Walker Resolution."

"Where are you from?"

"South Carolina."

"And your business:"

"To prevent the use of the sign-language in the school-room. Who are you?"

"I am Section First, one of the permanent boarders of the Constitution House. My business is to secure 'the harmonious union of all the teachers of the Deaf.' I am afraid you will cause discord if allowed to remain. To be candid, I don't like your name or your business."

"So you object to the name 'Resolution'?"

"Not at all. Resolutions are more common than Smiths among us. It is the word 'Walker' that suggests agitation to my mind. 'Resolution' is all right. Why, we have some Resolutions among our permanent boarders. At various times we have entertained

Good-Fellowship Resolution, Compliment-the-Host Resolution, Adulate-the-Cook Resolution, Self-Praise Resolution, Mortuary Resolution, and Resolution Galore. General Resolution we have had with us time and again. He is a charming old fellow and never hurts any one's feelings."

"But suppose I could benefit the Deaf by remaining?"

"That is not the thing; harmony is what I want."

Then Section First walked away, shaking his head and muttering: "I don't like that fellow's looks; I don't like his looks."

"Walker Resolution," said Section Fourth, another permanent boarder, "I am opposed to your staying here. We 'stand committed to no particular theory, method, or system.' We make it an invariable rule to entertain no one who advocates anything definite about teaching the deaf."

"If you cannot give me lodging," said the inquiring stranger, "perhaps you can at least give me a little information. What *do* you advocate?"

"Everything, or nothing—as you please to look at it. My motto is: 'Any method for good results; all methods and wedded to none.'"

"What does your motto mean?"

"I am not quite sure, but it is a very pretty motto."

"Very pretty; does it mean that all methods are good?"

"I think may be it does; I am sure it does; of course, it does."

"Should all methods be used in the same school?"

"I don't know about that, but all methods should be used somewhere in the country. I do not like to be specific."

"But suppose we find that the best results are found in the schools where certain specific methods are used to the exclusion of others?"

"In such cases I should concede the quality of the work, but I would insist that the superior results were obtained, not on account of the narrow, specific methods, but in spite of them."

"Then is no one method any better than any other?"

"I have no choice. I am wedded to none; I coquet with them all."

Walker Resolution again inquired, with disagreeable persistence: "Will you please tell me, Section Fourth, how you gained admission to the Constitution House?"

"I was placed here by the members of the Flint Convention."

"All of the members?"

"No, but a majority of them."

"Suppose a majority of the members of the Ogden Convention should demand my admission?"

"That would not make any difference. It is my business to keep the majority from making that kind of blunder."

"Were the members of the Flint Convention better informed in regard to modern methods of teaching than the members at Ogden?"

"Undoubtedly, or they would not have placed me here to keep out disagreeable persons like you. If I should permit you to remain I should lose my place of honor as a permanent boarder."

"You forget, my dear Section Fourth, that we do indorse most heartily 'the system of instruction existing at present in America.'" The last speaker was a permanent boarder by the name of Resolved I.

Section Fourth hastily retired from the lobby of the hotel.

"What is the matter with your friend?" inquired Walker Resolution. "He seems to be afraid of you."

"Oh, he always gets excited and hurries away when he sees me or my brother, Resolved II, talking to strangers."

"I am delighted with the harmony of your house," continued Walker Resolution, "and I am sorry that I shall not be able to remain with you. By the way, tell me about this 'American system' you are so enthusiastic over."

"With pleasure. It 'includes all known methods and expedients that have been found of value in teaching the Deaf.'"

"Then you approve of everything that is done in American schools?"

"Everything that has been found of value."

"Who decides what is of value and what is not?"

"Everybody, anybody, nobody."

"But a moment ago Section Fourth said that he would lose his place if he allowed any one to stay here while adhering to any particular system. I should think that either you or he would have to leave."

"Yes, I suppose it does look that way to a stranger; but the people who put Section Fourth here told him not to inquire into the affairs of my brother and me. I was indiscreet awhile ago; instead of saying 'we approve of the great American system,' I usually say, 'it commends itself to the world.'"

"But that really means the same thing."

"Of course, everybody knows that; but I must have some consideration for Section Fourth's feelings. He is very sensitive and feels very keenly the embarrassments of his position. He knows it is his duty to keep away persons like my brother and me, but he has been told that *we* are not to be molested. Sometimes, when he is in the depths, I tell him that this 'American system' is really not a system at all; that it is merely lumping together everything we can find and calling it a system, from lack of a better word."

"I see. Very thoughtful of you. You say this system 'commends itself to the world.' How does the world look on it?"

"As the best there is. The world is always visiting our schools."

"Which schools in America does the world like best, those in which all methods are used, or those in which English is the only language used?"

"The world is full of prejudice. You ask entirely too many questions."

"So you, too, Mr. Resolved I, will vote against receiving me at the Constitution House."

"No; to be consistent, I'll have to vote to receive you. I have adjusted myself to so many that I suppose you will not put me to any great inconvenience."

"Thank you for this cordial concession. I am reaching the point where even ice-water seems warm. I hope your brother will be equally tolerant."

" 'Tolerant' is not the word," sounded a cheerful voice; "I feel, Mr. Walker Resolution, that you have as much right here as I have."

"You are Resolved II, I suppose," said Walker Resolution, addressing the amiable speaker.

"Yes, better known as California Resolution. I took on considerable flesh at Flint; that is probably why you did not recognize me. My business, as you may have heard, is to see that 'every deaf child has an opportunity to learn to speak and to read the lips.' "

Walker Resolution hastened to assure the friendly permanent boarder that he and his work were well known, but was desirous of knowing how he had managed to gain admission at the Constitution House.

"Oh, that was easy," the other explained. "I was admitted at Berkeley, and nobody objected to me in the least."

"How about Section Fourth?"

"He has instructions not to give me any thought, or to meddle with me in any way."

"But isn't that irregular?"

"Certainly, it is irregular; but 'what is the constitution between friends?' Everybody knows I am doing good, and they sent me here on that account."

"What about the pure manualists?"

"A long time ago they would have given some trouble, but now there are so few of them that Section Fourth decided to ignore them."

"Section Fourth seems to be like the average policeman; he knows when to look the other way."

"I told you he had his instructions."

"Then why, Mr. California Resolution, can't he wink at me as well as you?"

"He can if he will, and I hope he will. You could help me wonderfully in my work, and there are other fields where you are needed. I fully believe—"

Just then the day clerk, who had been talking with Section Fourth, came upon the scene. Without a word, he caught Walker Resolution by the collar, gave him a shove, and kicked him into the street.

"What's the matter?" asked several bystanders.

"Matter! Matter enough!" panted the day clerk, as he felt for his diamond. "Smallpox has broken out in South Carolina, and this fellow has never been vaccinated!"

EDUARD WALTHER

(1840-1908)

A FEW WORDS UPON THE PEDAGOGIC SYSTEM OF WALTHER.[1]

By I. Landrain, Berchem Ste-Agathe, Belgium.

Signs.—One would think that Walther, one of the greatest oralists of our time, abhorred signs. To be sure, he was of the opinion that in teaching deaf-mutes and in conversing with them signs should be repressed, because this inaccurate form of communication is a hindrance to the acquisition of spoken language, but he recognized, nevertheless, the great help which the use of signs renders to the victims of deafness. We shall not take the time to discuss here the advantages and disadvantages of the sign-language; that has often been done. We shall merely give some of Walther's opinions on the use of signs in the instruction of the deaf.

The deaf, he said, should be obliged to make as much use of speech as they possibly can, for obligation begets habit, habit leads to spontaneous use of speech, and ends by finding pleasure in oral expression. But where articulated language does not exist—in the case of children, for instance, who have just entered school—signs to which they have been accustomed must, of course, be permitted, since there is no other way of communicating with them.

Gestures and motions which hearing children naturally use in conversation are not signs, properly speaking. The imitation of certain actions (running, walking, striking, falling, etc.), as well as the representation of certain visible qualities (size, form, etc.) by signs is not to be taken for sign-language either. All these are permitted in the instruction of the deaf, as are also the signs which hearing children use and understand. Walther attached great importance to natural signs, and especially to facial expression. He disapproved of the coldness and immobility with which certain teachers, under the pretense of not wishing to make use of signs, teach their lessons. A teacher who does not know how to give much expression to his face, Walther maintained, will not make a good instructor of the deaf, for the oral method demands a great deal of adroitness and ingenuity in this respect especially.

[1] Translated for the Association Review from "Revue Belge des Sourds-Muets," with the permission of the author.

Although in his opinion the conventional sign-language should not be used in the schools; teachers of the deaf should, nevertheless, be familiar with it and know how to apply it. "Even if the sign-language is not used in the institutions," he said in his Pédagogie, "the teacher should, notwithstanding, possess this means of communication. When he has to address a great assembly of deaf-mutes, whether educated or not, whether making use of articulated language or hardly knowing it at all, when he has to assist deaf-mutes before the courts, when he converses with deaf-mutes who are ignorant or have had little training, he is obliged to use the sign-language."

The exclusion of signs, he also said, is not a criterion which originated with the German method; it is only within the last thirty years that efforts have been made to abolish it. As a matter of fact, as long as the teaching of language was based upon grammar, it was difficult to do without it. But it would be erroneous to assume that we owe to the fight against signs the more favorable results gained in teaching. This improvement is above all due to the rational solution of numerous questions, such as the admission of pupils, the length of training, the didactic implements, the number of pupils in classes, the number of teachers, etc. "To fight signs is good; to work conscientiously is better."

Teaching of the Mother-tongue.—Contrary to the practice of certain teachers with whom the teaching of the mother-tongue is but a single branch, which they invariably call "language," Walther divided this instruction into several distinct branches, to be taught at different periods, according to the following scheme:

A. Sysetmatized teaching of language:
   I. Mechanical speech:
      1. Articulation.
      2. Mechanical exercises in pronunciation.
   II. Material teaching of language:
      1. Object lessons.
      2. Reading (and speaking).
   III. Formal teaching of language (Formeller Sprachunterricht).
      1. Oral: grammatical exercises.
      2. Writing: (keeping of a diary and) composition.

B. Extemporaneous exercises in speaking.

Walther, in justifying his system, said that unless this branch of instruction is logically divided it often happens that a teacher prefers certain kinds of lessons, cultivates one part more than another, is one-sided in his instruction; all of which is detrimental to the general knowledge of the mother-tongue.

Articulation.—Walther began his articulation instruction by teaching the elements—that is, the letters and their sounds separately. It must be remembered that certain German pedagogues, as Rössler, Schiebel, etc., started with the production of words (normalwörtermethode), which they divided into syllables, coming finally to the letters. This method is still followed by some at the present time.

Walther began with the mute consonants *f, s, sch* (= *ch*), *p, t, k, h, ch* (the pronunciation of which lies between the French *k* and *ch*). After these consonants had been thoroughly mastered, he proceeded to the development of the voice and to the production of the vowel *a*. Then the consonants alternated with the vowels, somewhat in the following order—(we say somewhat because according to Walther it is difficult to make a hard and fast rule for the teaching of letters, as it greatly depends on the aptitude and disposition of the pupils): *w* (which in German is often pronounced like the French *v*), *u* (French *ou*), *b, d, g, l, c, m, i, n, e* (which is often pronounced like the French *é*), *ng, j* (which is pronounced like *i* before the vowel by which it is followed), *r, ä* (French *è, ai*), *ü* (French *u*), *ö* (French *eu*).

Walther taught writing and articulation at the same time; thus he wished to fix the oral sign upon the memory and to convey exact knowledge of the spelling of the words. Not to teach writing in the beginning of the instruction of language would, according to him, be equal to depriving a cripple of his crutches, with which he cannot dispense. As a means of teaching he preferred lip-reading; the use of writing is to be restricted more and more as the pupil advances in the knowledge of the language; thus lip-reading is practiced, while at the same time the deaf are prevented from falling into the habit of thinking in written instead of in oral forms.

In contrast to his teacher Hill, Walther insisted upon teaching expressions and little sentences correct from the beginning, of course, the use of constructions such as: the eraser —— there, the stove —— hot, etc., not being prohibited.

Systematic Exercises of Articulation (Mechanisches Sprechen).—Apart from exercises in syllabation, which are of equal

importance with the teaching of elements and the constant correction of faulty articulation, Walther strongly advocated systematic exercises in articulation during the first four years of study (the courses of the institutions generally take eight years). Six or eight hours during the first two years and two hours during the two following years are to be devoted to these special exercises, each lesson comprising: *a,* exercises in gymnastic respiration; *b,* systematic exercises in articulation; and, *c,* exercises in pronunciation, applied to well-known expressions and phrases, turns of phrases, orders, proverbs, sentences, numbers, conjugations, colloquialisms, etc. Some of the systematic exercises in articulation are as follows:

a a a a a a a a a a a a a a etc.
i i i i i i i i i i i i i i etc.

â â â â â â â â â â â â â â etc.
ou ou ou ou ou ou ou ou ou ou ou ou ou ou etc.

a â a â a â a â a â a â etc.
a a â a a a â â a a â a a a etc.

af af af af âf af âf etc.
fa fa fa etc.
faf fâf faf fâf etc.

a ou ou i o a é o etc.
a é i a o ou è eu u etc.

papapapapa etc.
tatatatata etc.
mimimimimi etc.

one expiration being sufficient for each series. Our readers will easily comprehend the value of these exercises for the pitch of voice, its modulation, accuracy of emission, rhythm, etc. These special exercises are to be applied to all the phonetic combinations, principally to those of the symphones, to all combinations of consonants, to the union of words, etc., and are practiced individually and collectively.

Object Lessons.—All teachers are agreed on the great importance of *intuition* in the teaching of the deaf. But the way in which it should be employed has given rise to a great deal of discussion among the German teachers. The rule for primary schools for hearing children is to base the teaching of language on reading. The reading is given in such a way as to allow a great deal of intuition during the lessons. Reading, language, and intuition form in general one and the same branch of instruction. As a matter of

course, this system was adopted by many institutions for the deaf. Walther was strongly opposed to it. In teaching the deaf, he used to say, not the primary hearing schools should be our pattern, but the Mother's school. Hearing children have learned to talk before entering school; the deaf do not even possess the first elements of language; they have never felt the need of talking. We must not only induce them to observe, but we must also furnish them numerous pictures, so as to create in them the desire to express themselves; we must satisfy their curiosity and resort to constant repetitions in order to fix the expressions upon their memory. Reading books, moreover, cannot provide us with a choice of objects for observations sufficiently numerous, sufficiently varying, and adapted to the wants of the deaf pupils and to the situation of various institutions; and, besides, it is illogical to base the acquisition of language on book reading. Walther, therefore, strongly advocated the system in which intuition is treated as a distinct branch of instruction and the basis of the elementary teaching of language. How much time is to be given to it, the choice of objects for the lessons—to be made, of course, from the surroundings of the child—the method to be pursued in this course, are topics which he has remarkably well elucidated in his Pædagogie.

As to the method to be followed in object lessons, he is vigorously opposed to the way of certain teachers who constantly ask questions of their pupils. For an answer it generally suffices to modify the order of words given in the question or to complete a phrase. Such a mechanical way must needs do great harm to the spontaneousness of language. One sentence correctly composed by the child himself is better than ten answers to questions propounded to him.

Reading.—The great majority of institutions for the deaf begin the regular course in reading with the second trimestre of the second year. According to Walther, it is better not to begin this course before the third year. Taste for reading may only be developed if reading is not begun prematurely. The difficulties of articulation, the explanation of the ideas, the grammatical exercises, are too heavy burdens to be laid upon the pupil at the same time. Language first, reading later!

According to him, the reading books used in the schools for hearing children, simple as they may be, are not suitable for the first year in reading in the institutions for the deaf. These classes need primary books, especially published for young deaf children,

and illustrated works carefully compiled by experienced teachers. It is only in the higher classes that one can make use of the readers used in public schools.

Walther was convinced of the great importance which reading may have for the instruction of the deaf in school, and especially in after life, and it was his advice that the institutions should use all possible means to develop in their pupils the taste for reading. The teachers should form it by the practice in reading of popular works, which are moral, interesting, and instructive. During the last two years which they spend in the institution the pupils should be obliged to read at a given time outside of class work books selected for them by their teachers; this study should be carefully controlled. Each institution should be provided with a library for the use of the pupils. Moreover, during the two last years one hour each week should be devoted to reading of newspapers.

Practical Teaching of Grammar and Composition.—According to some critics, Hill, the reformer of deaf-mute teaching in Germany, was at fault in neglecting the systematic, practical teaching of grammar. It is evident that one should not teach the deaf definitions or rules; everything that does not tend to develop understanding of the language and facility in expression should be banished from the classes of the deaf. But it is, nevertheless, absolutely necessary that they should actually know the main features of the conjugation of verbs, the declensions and variations of the articles, the pronouns, the substantives, the adjectives, the participles, the use of prepositions (in German some prepositions govern the accusative, some the dative, and others the genitive), the conjunctions, the degrees of comparison, etc., and that they should become familiar with certain turns of phrases which are chiefly learned through grammar. This is what our German colleagues designate by "formeller Sprachunterricht" (the formal instruction of language), in distinction from "materieller Sprachunterricht," based on intuition and reading. Walther demanded that with the beginning of the third year two hours each week should be devoted to it, apart from useful observations in this direction which the teachers might take occasion to make during object and reading lessons. But it is especially with regard to the deaf that Herder's maxim should be practiced: "Grammar is learned through language and not language through grammar." No theory then, but practice. The study of grammar is to be made by means of well-chosen examples. Those which have no meaning for the children, those which they do not

understand, and expressions which are not constantly used ought to be rigidly discarded.

Composition.—Walther considered composition also an important branch in teaching the deaf. The value of an institution for the deaf, he said, is often tested by articulation. The way in which pupils are able to express their thoughts in writing should, however, also be taken into serious consideration, and the teacher should take pains in cultivating this branch. The first written exercises are to be based upon the instruction in object and reading lessons, and are chiefly intended to fix upon the memory the matter and the instructions taught during those lessons and to facilitate repetition. The special exercises intended to develop the written expressions of ideas are to begin with the fourth year. The pupils are to keep a diary, in which they briefly relate the little events of their every-day life. Gradually these notes are to be superseded by the description of events which were of interest to them in school, in their homes, or on the street, etc., calls, walks, anniversaries, markets, storms, accidents, bathing, forests, flowers, etc. After some time they will attempt to compose little descriptions, narratives, and stories. A regular course of training in style should, however, not be undertaken before the sixth year.

Spontaneous Exercise in Language.—We close this little sketch with a few words about conversation. It must not be neglected in any lesson; the teacher must know how to take advantage of numerous little incidents and events in order to teach through them customary forms of expression. Apart from this incidental teaching, Walther demanded that after the second year two hours a week should be devoted to spontaneous exercises in language—narration, conversation, gossip, dialogues. Well directed by an able teacher, these unconstrained uses of language may greatly facilitate readiness of expression and spontaneity of language with the deaf.

THE INSTITUTION PRESS.

THE COLLEGE OF TEACHERS OF THE DEAF AND DUMB, LONDON.

Examination Questions of the Joint Examination Board.

[In England there exists a "Joint Examination Board," made up of leading educators of the Deaf, before whom come annually under-teachers in the schools as candidates for a "certificate" of capacity. As we understand it, the examination is submitted to voluntarily by teachers, but the fact that a goodly number take it annually attests the high value placed upon the certificate when it is won. The list of questions given at the last examination, in July, we reproduce from The Teacher of the Deaf. An article by Mr. Frank G. Barnes, printed elsewhere in this issue, explains fully and clearly the history and functions of the College of Teachers.—F. W. B.]

History of the Education of the Deaf and Dumb.

1. What was the nature of the earlier attempts to instruct the Deaf and Dumb? State where the first organized schools for such children were established in France, Germany, England, and Scotland, the teachers of those schools, and the method of instruction they followed.

2. Who was the pioneer of deaf-mute education in America? What do you know respecting his reception in England and Scotland when seeking to acquire the art of teaching the Deaf and Dumb? What was the outcome of this, and what did it lead to? Supply any information at your command as to the worth and character of two of his sons.

3. What single method of instruction has been persistently and rigidly followed in Germany? Do all German teachers, as well as the Deaf and Dumb themselves, regard these restrictive procedures with approval? What evidence can you adduce in support of this?

4. Up to the passing of the Acts of 1890 and 1893, how had the education of Deaf and Dumb children been carried on and maintained in Great Britain? Give as concisely as you can the leading provisions of the English (or Scotch) Act; and state what you conceive to be the advantages: as also any defects in giving effect to legislative enactment, having regard to the character of the official inspection, the grant-in-aid, or any other attendant circumstances.

5. What credential has been obtainable in Great Britain during the last 20 years, certifying a teacher's competence to instruct the Deaf and Dumb? What bodies conferred these certificates? State what important modification of their separate and independent action has recently been effected, and give your views as to the results you consider should accrue from this change.

Alternative Questions.

6. What course was followed by certain school authorities on the passing of the Acts to provide suitable educational facilities for the Deaf and Dumb children they then became responsible for? Has this mode of carrying out their obligations since grown in favor or the reverse? Give your reasons for thinking so.

7. What position should you assign to the United States by the comparison with other countries in the liberality of equipment of their schools and efficiency of the work and educational results obtained? In what respects do their Institutions differ from those in England?

Five questions only to be answered.

Mechanism of Speech.

1. Give a complete list of all the sounds of which the English spoken language is made up; classify these sounds and state in what order you would develop them in a deaf child.

2. Describe the production of each articulation and vowel in the following words: "examination," "sprinkle," "chain," juncture," "yield," "file." What difficulties would you be likely to find in developing these sounds in a deaf child; how would you contend with these difficulties?

3. Differentiate between (*a*) vocal articulation and vowel sounds, (*b*) continuous and explosive sounds, (*c*) lingual and labial vowels.

4. What difficulties would a deaf child be likely to find in pronouncing the following words and how would you deal with these difficulties?

"Singing," "scissors," "judge," "yes," "sixty," "enquire."

5. To what extent can a deaf child be taught modulation, emphasis, tone and rhythm, and how?

Alternative Questions.

6. Define nasality. By what means would you correct this fault in a deaf child's articulation?

7. Describe in detail the difference in the position of the vocal organs in producing the sounds "O" (on) and "OO" (hoop).

8. Give the phonetics and describe the vowel formations in "she came the same way yesterday."

The Method of Teaching Language to the Deaf.

1. Give two sets of notes of a lesson on a "Bee":—the first set to be suitable for a 3rd year class, and the second set for a 6th year class.

2. Give an outline of the language you would employ, and the forms of language you would teach the children in connection with K. G. occupations such as mat-plaiting, clay-work, and simple needlework.

3. Mention some of the difficulties that deaf children encounter in a simple narrative, &c., read for the first time from School Readers for ordinary children.

4. In the statement, "My father has a watch," what questions should a pupil be able to ask at the end of the 4th year?

5. Explain the use of suffixes in word-making, and show by examples how you would avail yourself of them in extending the pupil's language.

6. Explain in terms suitable for an advanced class of pupils the difference between—

Friend and acquaintance, True and truth,
Kindness and generosity, Well and health,
A present and a prize, Credit and creditable,
To taste sweet and to smile sweetly.

7. Explain when and how you would begin to teach Short Division. Give an example of your method of working on the blackboard, and the language you would employ.

8. How would you correct the following of a deaf child's language:

"The weather was hails and the snow last week."
"The bird sits in the nest and warm on its eggs."

Five questions only to be answered of which 1, 2, and 7 must be taken.

Principles of Education.

1. Define Education, Instruction, Training, indicating modifications (if any) in the aim and scope of each which the deprivation of hearing necessitates.

2. Contrast the mental condition of the congenitally deaf child with that of the hearing, in each case before direct school instruction commences; and state what, in your opinion, is the most important provision to be made in the case of the former to obviate the disadvantages of his deprivation.

3. What are the various classes of deaf pupils found in our schools? State briefly how you would differentiate your instruction to meet their several requirements.

4. What special provision, do you think, it is desirable to make during the school period for manual (industrial) and physical training.

5. What is psychology, and in what respects may its study be advantageous to the teacher of the deaf.

ALTERNATIVE QUESTIONS.

2. How would you inculcate principles of morality in a deaf child?

3. The Imagination and the Feelings: how may these be effectually developed and trained?

PHYSIOLOGY.

1. How do sound waves reach the auditory nerve endings?

2. Describe the Cochlea.

3. In speech, how do the nose and the mouth modify the sound which has been produced in the Larynx?

4. Give a brief description of the Larynx. How is the human voice produced?

5. Give a brief description of the Chest and its principal contents.

In The Youth's Companion of October 1, there is an interesting article on "The Gift of Speech," by John Macy, a member of The Companion staff, editor of the supplement to Helen Keller's "The Story of My Life," and student of matters relating to the deaf and blind. He began with a description of a character of his town—a deaf and dumb man thirty or thirty-five years old, without an education and the object of ridicule and the children's "choice of a butt for laughter." In referring to this unfortunate man, Mr. Macy said: "Years before he could have been taught, if there was any school for the deaf in that part of the country. If there was not, then society was to blame; it was to blame in any case, for the deaf have been taught a century or more, and it is the right of every child, deaf or blind, to receive an education at the hands of the State. And parents and others in authority must see to it that there are no deaf children growing up in lifelong mental babyhood, growing to be strong men and beautiful women, forever isolated from the intellectual communion of men." Mr. Macy then calls attention to the wonders that can be wrought by proper teaching and cites an example—a young woman who had been deaf since early childhood, and who "graduated with honors from one of our best colleges." He once listened to her addressing an audience composed of men of letters and educators, and some in the audience understood what she said, but many could not have understood all the words for it was an "artificial speech." He points out at some length the early education of a child—hearing and deaf—comparing the advantages of the one over the other. In referring to the slow progress in the early education of the deaf child, Mr. Macy reminds us that it takes longer to spell than it does to speak. We admit this and would add that it takes longer (for the deaf) to articulate than it does to spell. Mr. Macy has treated the subject in an impartial way—not going to that extreme to which a good many of those treating the subject of speech for the deaf are accustomed to go.—[North Dakota Banner.]

Fully half of the pupils in one of two beginning classes this year range in age from 16 to 28, and two of them are little short of six feet in height. They have to work side by side with little tots of eight or nine years, learning the same *cat, dog, cow,* etc. Such a spectacle arouses in the heart of the true friend of the deaf a feeling of indignation against the ignorance or folly that has kept such persons out of school during the golden days of their childhood, when learning would be easy and a delight instead of the almost hopeless task it becomes so late in life. In these days of the railroad, the telegraph, the telephone, and the rural free delivery, it does not seem as if there could be any valid excuse for keeping deaf children out of school.—[Companion (Minn.).]

The Oklahoma School has just opened its doors with an enrollment of 165 pupils. There are 15 teachers now, five of whom are new, Misses Ren, of Nebraska; Loggins, of Missouri; Lynes, of Texas; Messrs. Sayles, of New York; Hayes, of Kansas. A printer will be here next week. All the teachers have been shifted to other classes on account of the addition of the oral system which predominates and is a match to the manual system. Miss Brummit is the head teacher and principal of the manual system and Mrs. Hickman, of the oral system. The school is within one block of the city and 175 feet of the Platt National Park, which consists of 840 acres.—[Deaf American (Neb.).]

Last Tuesday the magnificent new gymnasium at the school for the blind was thrown open for the inspection of the friends of the school. It cost $40,000, and is very complete. In the basement there is a good sized swimming pool with full aquatic outfit. On the surface floor is a full equipment of the latest devices for physical development. Skirting this floor is a composition roller skating surface. In the gallery is a running track, but it may also be used by visitors at exhibitions. The program on opening day included addresses by some of the most prominent men of the city.—[Western Pennsylvanian.]

The New York Journal recently made the surprising statement that 80 per cent of the pupils of the New York (Fanwood) School were of foreign parentage. It is to be expected that in a cosmopolitan seaport city, and the one that receives the main stream of the incoming tide of immigrants, the proportion of foreign-born children in school should be large, but 80 per cent seems an abnormal number. Where do the native-born deaf come in? It looks as if this large foreign element, representing many nationalities, must present some problems that schools farther inland do not have to face.—[Maryland Bulletin.]

The oral department had rhetoricals in the chapel last Thursday. It was a Thanksgiving exercise. The third grade class told of the Pilgrims, their trip to this country in the Mayflower, their first hard winter, their first spring and planting time; their harvest and the first Thanksgiving day. Sixteeen boys and girls from four different classes recited "We are thankful," each one telling of something he was thankful for and then came a short recitation in concert by the sixteen boys and girls. Twelve pupils, from each of the upper classes, recited the Letter of Thanksgiving, each pupil reciting one verse holding up the letter representing his verse and all recited the last verse together.—[Deaf Hawkeye (Iowa).]

The latest news from Manila says that the building for the new School for the Deaf and the Blind is completed, and the school, with Miss Delight Rice as principal, is now well under way. She has a hearing native normal graduate as an assistant. English is the language taught. Miss Rice has to confine her pupils strictly to spelling and writing; once they break into signs, it is difficult to restrain them in their use.—[Chronicle (Ohio).]

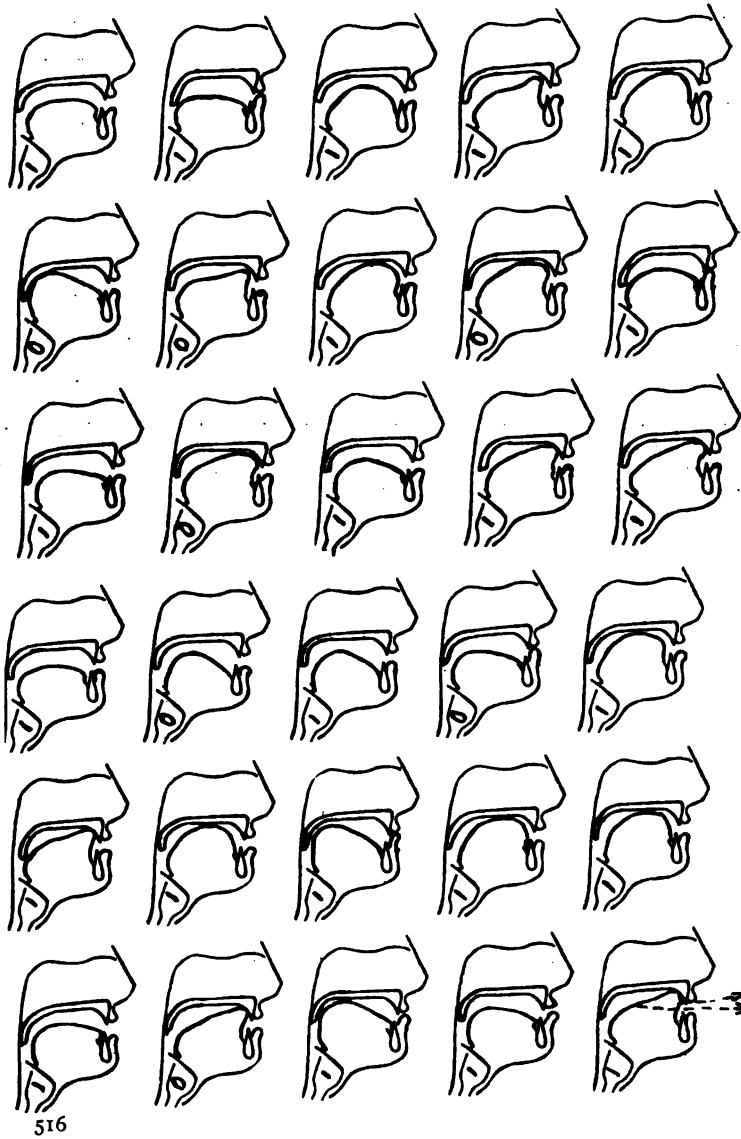
The Mississippi School observes December tenth, each year, as "Gallaudet Day," and on this occasion invites some prominent deaf person to come to Jackson and deliver an address before the school. This year, Dr. J. L. Smith, of the Minnesota School, has been chosen.—[Missouri Record.]

St. Olaf College, Northfield, Minn., has a department for the deaf which is in charge of A. O. B. Molldren, a graduate of that college and a former normal fellow of Gallaudet College. The aim of the department is to give such deaf students as are enrolled an academic education.—[Ohio Chronicle.]

The St. Louis Board of Education has decided to pay car fare for children who live a mile or more away from the school they attend. This will include deaf children who attend Gallaudet Day School.—[Missouri Record.]

THE MELVILLE BELL MEMORIAL DEPARTMENT.

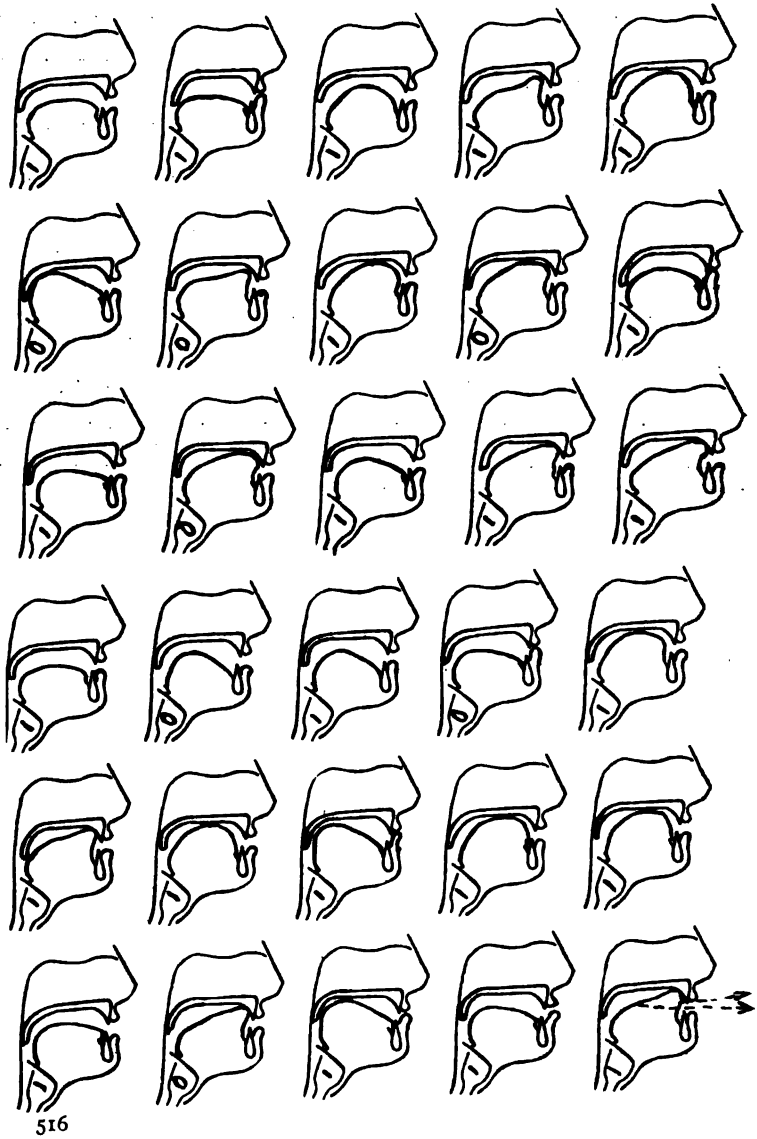
M. GARDINER, EDITOR.



"BEHOLD, I BRING TIDINGS."

THE MELVILLE BELL MEMORIAL DEPARTMENT.

M. GARDINER, EDITOR.



-ɛf ɯɐɹɟɐ ɯɹ ɐɾ ʇɹʎ ı ɹıʃɯ ɐɥʇo ɯɹ ɐʃɐ ɯǝlɔ
ʃɐʇuɐɯoʃɐʃ ɟɥʇ ɐʃɐ ɯɹ ʍɐʇʇ
ʍɟ ɐɯɐ ʇʍɐ ɥɟɐ ʇo ɯɐɹʃ ɟǝ ʇo ɐʃǝ ɟɐʃ ɯɟɟǝ
ɐʃɐʇ ɯɹ ʍɐɹɟ ɹɐ ɯɟ ɛf ɐɾʇɯɐ ɯɹ ɯɟ ɛf ɐɾʇɯɐ ɹɐ ɟɐ
ɟɔɔ ɯɹ ʍɹǝɔ ʇɐɥʍ ɯɐɹʃ ɐɯɐ ɥɟɐʇıʍ ɐɯɐ ɯɹ ɐʃǝ
ɟo ɔɹɐ ɐʃɐ ɯɹ ɯɟ ɛf ɐɯɐ ı ɐɾ ɹǝɯɟ ɔɹɐʇɐɔ
ɐɯɐ ɟǝi ɔɐɥǝ ɯɐɹʃ ɐɯɐ ɔɹɐʇɐɔ ɟo ɔɹɐ ɐʃɐ
-ɯɐɹ ɐʍ ɹo ɐɯɐ ɯɐɹʃ ɐɯɐ ɟo ɔǝʇɔ ɐɯɐ ɯɹ ɐʃɐ ɯɐɹ
ɐɾʇɯɐ ɯɹ ɐɾ ɹǝʍo ɟı ɐɯɐ ɯɐɹʃ ɐɯɐ ɯɹ ɐʃɐ ɹǝʍo
ɐɯɐ ɯɹ ɐʃɐ ɔɹɐʇɐɔ ɟo ɯɐɹʃ ɐɯɐ ɯɹ ɐʃɐ ɹǝʍo
ɐɯɐ ɟǝi ɔɐɥǝ

[1] Transcribed from "Just So Stories for Little People, by Rudyard Kipling; copyright, 1902." Illustrations reproduced by permission of Doubleday, Page and Company, New York, publishers.

ɯlɐ ʇuɐlɐ ɯ ɐlnɔ ɹoʎɐ ʍnlʍ ɹ ɹnʎs ʃɐ ɯ ɐlɹɐɯoɹ -ɛɟ

ɐɹʊʊɐ ɯ ɐlnɔ ɟɟɐ ɹnɐɯoʇɐɔ

ɯ ɐɯ ɹʊɐɥ ɟɟɐ ɐɔɯʇɛ ɯ ɹɐɥ ɯɐnl ɹɐ ɹɐ ʃʃnɯ ɐlɛ ɹɐl ɯɟɛ

ɐlnɯ ɔl ɲɟ ɐɟɟıʇ ɯ ɯɟ ɛɟ ɐɹʊʊɐ ɔɐlɔɯlɐ ɯ ɹɐɥ ɐɟɟıʇ

ɔɐɯɹɐɯɔɐɯɟ ɹɐɟ ɐʃʃıɔ ɯɐɯ ɹɐɥ ɯɐɯ ɹɐɟ ɐɔɯʇɛ ɯ ɹɐɥ

ɟɔɹ ɯɹɐɥ ɯɐɯ ɐɔɯʇɛ ɯ ɹɐɥ ɯɐɯ ɹɐɟ ɐɔɯʇɛ ɯ ɹɐɥ

ɔl ɹɐɟ ɯɐɯ ɟɟ ɯɐ ʃɹ ɯɐl ɟɟɐ ɔl ɹɐɟ ɯɐɯ ɹɐɟ ɯɐɯ ɹɐɟ

ɯɐɯ ɐɟɔ ɯɐɯ ɹɐɟ ɯɐɯ ɹɐɟ ɯɐɯ ɹɐɟ ɯɐɯ ɹɐɟ ɯɐɯ ɹɐɟ

ɯɐɯ ɹɐɟ

ελοναε τιο
ολ ιν ανεαλναγαμ ειζ ιν ειτιε αμοτ ιν αμα ιο αιμ ιειμ αιν ιο
-ασιαε ιο αιμ αιν ιειμ αιο ιο ιν ιτιε ιν ιαοτ αλμ αιε ιν ιαοτ ιν αιμ ιειμ αιν ιο
-αιε ανιαγε αιο ιο ιο αιμ ιτιμ αε ιο ιαοτ αιμ ιε αιμ ιο ιαοτ ιν αιμ ιειμ αιν ιο
αιμ ε ιαοτ ιν αιμ ιειμ αιν ιο ιαοτ ιν αιμ ιειμ αιν ιο ιαοτ ιν αιμ ιειμ αιν ιο

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ירושלים.

אל תשכחי את מלכת שבא ומלכי יהודה ומלכי ישראל שמעה את דברי שלמה ומלכי ישראל

Bullet in the left wing of the magpie.

Magpie with bullet in left wing.

The Psalm of Life.

Tell me not, in mournful numbers,
"Life is but an empty dream!"
For the soul is dead that slumbers,
And things are not what they seem.

Life is real! life is earnest!
And the grave is not its goal;
"Dust thou art, to dust returnest,"
Was not spoken of the soul.

Not enjoyment, and not sorrow,
Is our destined end or way;
But to act, that each to-morrow
Finds us further than today.

Art is long and time is fleeting,
And our hearts though stout and brave
Still like muffled drums are beating,
Funeral marches to the grave.

In the world's broad field of battle,
In the bivouac of Life.
Be not like dumb, driven cattle!

Be a hero in the strife!
ɐf ı oſωɥ ſω ωſ uoo]ɹɔ
Trust no Future, howe'er pleasant!
uo]uo ωɥ ɔoʇɒuıʎ o]ɥʎ ɒωſωuo
Let the dead Past bury it's dead!
ωſo ωſ ɐſω ɒ]uo ɐſωſ ſou ɐſω
Act, act in the living Present!
ſɒo ſɒo ſω ωſ ωſɜſɐ ɒo[ωuo
Heart within and God o'erhead.
o]ʎo ɜſωſω ſɯo ɐſɯ ɟʞoſω

Lives of great men all remind us
ω]ɹɜɯ ɟɜ ɐɯſɒ ɐſω ɟɯ ωſɐ]ɹɯɯ]u
We can make our lives sublime
ɜſ ɑſω ɐſɒ ɟʞ ω]ɹɜɯ u]ɐω]ɹɐ
And departing leave behind us
ſɯɯ ɐſo]ʎoſɐ ωſɜ ɐſo]ɹɯɯ]u
Footprints in the sands of time;
ɜʇɔɒoſɯɔu ſω ωſ u[ɯɯɯ ɟɜ o]ɐ

Footprints, that perhaps another,
ɜʇɔɒoſɯɔu ɯ]o ɒ]ʎo]ɒu ſɯ]ɯ]ʎ
Sailing o'er life's solemn main,
u[ɯſɐ ɟʞ ɯ]ɹɜu uɟɯ]ɐ ɐſɯ
A forlorn and shipwrecked brother,
ı ɜɟʎɯɟʎɯ ſɯɯ ɑſɒo]ɑɔɒ ɐɯ]ɯ]ʎ
Seeing, shall take heart again.
uſſɐ ɑ]ɯ ɒ[ɒ o]ʎɔ ı[ɐ]ɯ

Let us, then, be up and doing,
ɯ]ɔ]u ɯ]ɯ ɐſ]ɒ ſɯɯ ɯʇſɐ
With a heart for any fate;
ɜſɯ ı o]ʎɔ ɜɟʎ ſɯſ ɜ[ɒ
Still achieving, still pursuing,
uɔſɯ ſɑɒſɔuſɐ uɔſɯ ɒ]ʎɔɑʇſɐ
Learn to labor and to wait.
ɯ]ʎɯ ɔʞ ɯ[ɐ]ʎ ſɯɯ ɔʞ ɜ[ɒ

QUERIES.

Answers to Puzzles in the October Review.

First line: 1, Lip-shut; 2, low front; 3, point-shut, voice, no 4, point center-aperture, front center-aperture (or point "mixed" 5, point divided-aperture, voice = DIWUω: (colloquial pronunc tion of "pencil.")

Second line: 1, Lip-shut voice; 2, mid-back; 3, point-shut; point-shut, voice, nose = ΘJOW: (colloquial pronunciation "button.")

Third line: 1, Point-shut; 2, low back wide, round; 3, lip-sh voice, nose; 4, voice (indefinite); 5, point center-aperture, fr center-aperture = OJƎIU (Thomas).

Fourth line: 1, Point divided-aperture, front center-apertu 2, high-front wide; 3, back-shut, voice, nose; 4, back-shut WſWO (think).

Fifth line: 1, Voice (indefinite); 2, back-shut; 3, mid bac 4, lip-shut = I OJD (a cup).

Sixth line: 1, Mid back wide, followed by glide towards hi front; 2, point center-aperture, front center-aperture; 3, low b round; 4, front, center-aperture, voice; 5, high back rou = Jr UJ ϖ (I saw you). M. G

Argument upon "ch" and "j" being Simple, not Complex, Sounds.

541 Lexington Avenue,
New York, October 19, 1908

To the Editor:

There is a class of Italians here that I am teaching in Engli American History. From sheer self-interest I think I shall g them some phonetic drill. There are some twelve or fifteen them, and some who have studied English for a year are still p speakers, and some are quite ignorant of it and its sounds. I h a copy of "World English," and I wondered if it had ever b taught to foreigners. What would you charge for a number copies by way of an introductory price?

I am sending below my arguments for the fact that *ch* and *j* simple, not complex sounds. Will you also show it to Dr. Bell a let me know your own and his judgment on the argument?

Thomas F. Cummings

In "Principles of Speech," p. 278, Ω and Ω are given as symbols for *ch* and *j*. That this is correct—*i. e.*, that *ch* and *j* are sounds from a simple, and not compound position, the following proofs are submitted:

1. All nations have heard them thus.

2. *Ch*, *j* can be made with the tongue protruding from the mouth, or doubled against the lower front teeth. Thus absolutely precluding any *t* which requires the *tip* of the tongue.

3. As all the other "stop" positions, *p*, *t*, *k*, have corresponding nasals; so does this. As *m*, *n*, *ng* answer to them, so does *ñ* (cañon) answer to *ch* and *j*.

4. Orthœpists give one pronunciation of suggestion as "sud-jestyun," owing really to the failure of the untrained English ear to catch the sound of *j j* and *ch ch* which we continually have in Hindustani. If one will say carefully "sud-jest," he will note the difference between that and sujjest. Hence this failure of ear accounts for the writing of *tch*, *dge*, as these actually are doubled in the participles, as is hit(ting), watching, judging.

5. The distinction between aspirated and unaspirated "stops" is a vital point in India and China, so we distinguish between *ch* and *chh*, *j* and *jh*, but never *sh* and *shh*, which is manifestly impossible as *sh* is already aspirated.

6. In the pharyngal exercise aspirates are silent, not stops; *ch* is audible but not *sh*.

REPLY.

We do not think it necessary to submit this question to Dr. Bell (who is at present abroad), for it is a matter on which experts differ, and some latitude on such points is always allowable.

The real question at issue is not how a certain sound should be written, but how it is *made*. If Mr. Cummings thinks that *ch* and *j* are made by "front-shut" (Ω) and "front-shut-voice" (Ω) he is entitled to write them so. If another orthœpist thinks they should be made by ΟΩ and ΦΩ he is also entitled to write them so. Either way they are perfectly intelligible to any one conversant with the symbols; and herein lies the great merit of this system of symbols. They represent the outlines of the instrumentalities employed in producing sounds, and when experts differ as to the positions assumed by these instrumentalities in forming particular sounds, they have in the symbols a ready and sure means of portraying and differentiating these positions by combining these elementary out-

lines in various ways, so that readers can adopt whichever rendering they consider most nearly correct. The proof of the pudding is in the eating, and if Mr. Cummings can get a satisfactory *ch* and *j* from his Italians by Ω and Ʊ it is all that is wanted. The end gained, the means are thereby fully justified.

In his invention of the symbols, Alexander Melville Bell placed in the hands of all writers, whether philologists, orthœpists, ordinary literati, or writers of dialect stories, a wonderfully flexible and pliable tool by which to represent all different shades of sounds. They are to use it to express their own will—they are not to be mastered by it as one is by the fixed hieroglyphics of dead languages.

While Dr. Bell might possibly admit the technical justice of Mr. Cumming's contention that Ω and Ʊ more nearly represents the actual positions assumed in sounding *ch* and *j*, it should be remembered that he has always taken strong ground upon the advisability of limiting the number of symbols employed for ordinary use. He has always held that teachers should concentrate their efforts on essential things, and that pupils should not be bothered and have their attention distracted by non-essentials. They become necessarily familiar with the Ʊ, Ʊ, and Ω symbols, and if with these teachers can get a sound sufficiently correct to pass muster among ordinary hearing speakers, it is not worth while to introduce another special symbol. For this reason he would probably continue to prefer the combination of ƱΩ and ƱΩ. For this reason also he advocates the use of the indefinite voice symbol ɪ in unaccented syllables, rather than more specific vowel symbols which portray very slight shades of differences like ɪ and ɪ. M. G.

Voice Culture.

Will you tell me of any books on "Voice Culture" for the deaf?

A. C. E.

[The above question was referred to Mrs. Sarah Jordan Monro, of Boston, who has kindly furnished the following reply.—Editor.]

The same question has been asked me many times, and I am glad that there is a growing interest in the subject. I have never found any works upon voice culture prepared expressly for teaching the deaf, but the best way, it seems to me, is to study the methods used in training the voices of those who hear, and adapt them to the

teaching of the deaf, for a normal deaf person—I mean one who has no malformation of his vocal and speech apparatus—has the same voice and speech organs as one who hears; also a mind to control those organs. However, time and effort would be saved if books upon the training of the voices of the deaf were prepared by a person who has adapted the methods. Some of the books that I would suggest as helpful are: *The Art of Breathing*, by Frank A. Tubbs; *Lectures upon Sound*, by Tyndall, especially chapter on vowels; *Voice, Song and Speech*, by Brown and Behnke; *Speech-Tones*, by Prof. A. M. Bell; *Principles of Elocution*, by Prof. A. M. Bell; chapters from works on physics for a knowledge of resonance. I should also recommend music and poetic-metre for rhythm; lessons in singing from a *good* teacher. My own little book of "Don'ts" has helpful suggestions, and last to be mentioned in my list, but of *very great* importance, are books upon the action of the mind as given in mental philosophies, its influence over the body in general, and the effect of its action upon the voice and speech apparatus. I would mention also, though I know of no published work upon it, a knowledge of harmonic gymnastics.

SARAH JORDAN MONRO.

By request we print herewith in ordinary type the verses which appeared in our October number, as it is suggested that "to do so would greatly encourage the learners to improve their translations."

TO A SEAGULL. THE SONG OF A SCOTTISH EXILE.

(*Written by A. G. B. before he became an American citizen, with help from Miss Laura C. Redden.*)

Bird of the Ocean, joyous and free!
Fly to the mountains of Scotland for me.
Fly to the land of the Findhorn and Spye,
To the ruins of Pluscarden,[1] ivied and gray,
And bring from the nook that in years past was mine,
But a leaf or a stone, for the sake of lang syne.

O! Pluscarden, Pluscarden, dear to my heart,
Though thousands of miles from my vision thou art,
I bear still thy image impressed on my brain,
And sadly I ask, Shall I see thee again?

O! had I but pinions, bold bird of the sea,
How gladly to Pluscarden I'd fly with thee.
On, on, and away, we two, o'er the foam,
No land would long hold me, save Scotland my home.

[1] A ruined Cistercian Abbey in Elginshire.

THE PROPER SYMBOLIZING OF R IN "DEPARTMENT."

Mr. Harris Taylor writes asking why we use the symbols ɪɾ in the word "Department." I do not know why. They must have crept in inadvertently at first, and simply remained there unnoticed. I thank Mr. Taylor for calling attention to this matter and hope he will approve of the change made. M. G.

THE MYSTERY OF THE SEALED BOOK OF THE VOLTA BUREAU FINALLY SOLVED.

LETTER FROM MRS. MILLS, CHEFOO, CHINA.

TO THE EDITOR:

I was greatly interested in the account of "Bell's Symbols in Chinese," which appeared in the June number of THE REVIEW, and I thought I knew who the transcriber might be, so I sent a letter to the Rev. W. H. Murray, School for Chinese Blind, Peking, and have his reply, from which I quote:

"I am pleased to say *I was the author of that transcription into Bell's Visible Speech.* I had a class of young men who were reading their own language and the Gospel of Matthew in those symbols. A gentleman, the late Thomas Coats, of Paisley, Scotland, helped me in regard to the expense. I was a colporteur of the National Bible Society of Scotland, and after being on the streets during the day with the Scriptures, I spent the evenings teaching the Symbols. Mr. Coats was a great admirer of the system, and when he learned of my interest in it desired to meet the expense of introducing it in China should the opportunity occur, believing it would be of great value. In writing the symbols I expressed the tones by thick and thin lines."

Mr. Murray's attention was called, soon after the time of which he speaks, to the need of work for the blind, and to them he has given his time. Why he made no use of the Bell Symbols in teaching them I have never been able to understand. The system which he uses—one of his own devising—seems to me far less happy, as it requires the memorizing of a large list of arbitrary numbers. He has, however, done good work with it. Any system will succeed when the heart is in it.

The time seems to have come when something definite should be done in calling the attention of the Chinese to the Bell Symbols, for they are searching for an easier way to write their language. Among the missionary teachers, Romanization is being used to

some extent. A standard system has been agreed upon and books are being printed in it, and, I believe, a newspaper, but it is not entirely satisfactory. The sounds of the letters are too indefinite, and there are sounds for which no letter exists; take, for example, ɿ, which is much used in Chinese; in Romanization we represent it by a double dotted *i* (ï).

Some time ago Peng-I-Dzong (ᗡ]ᘓ-ſ-ᗢᗯ}ᘓ), one of China's progressive scholars, now banished for having too radical ideas, invented a system of shorthand, which was favorably received by the people. Yuen Shi Kai, then in charge of the army, adopted it to be used in schools for the soldiers, but it was to be taught free of charge. Several books were printed in it, but after Peng's banishment it was dropped, and we hear nothing more of it. It was adapted only to the Pekingese, which limited its sphere of usefulness.

The meeting between Dr. Bell and Dr. Tenney and the happy incident of the unsealing of an unknown book proves conclusively all that is claimed for the symbols. I see in the system for China, not only an easier way of writing the language, but a method by which the pronunciation of the characters can be unified. What a boon that would be!

I am doing what I can, but it takes time. I expect to visit Peking, and shall stop in Tientsin as I pass through, where I hope I may see Dr. Tenney. It may be that we can arrange a demonstration of the use of the symbols.

I have my book in Chinese, corresponding to "Visible Speech in Twelve Lessons" in English, nearly finished. At present it is in the shape of wall charts, but I shall put it into book form after I have used it a while and made some revisions which it is sure to need. When I have it in shape, could I make arrangements to have it printed by the Melville Bell Memorial Department of THE REVIEW?

I shall take my charts with me; also a few of my pupils who can read the symbols, and one of my hearing teachers. We will be able to give them a very good illustration of the use of the symbols.

It would seem an opportune time for Dr. Bell to press the matter a little through the Chinese Minister in Washington, followed by a visit to China. He might be able to do a good deal in the way of getting it introduced.

I am greatly pleased with the "Melville Bell Symbols Depart-

ment." I think, though, that I should like capitals and punctuation marks to be used. I believe we would read it more easily.

I am sending you another copy of my books. You will notice that the first volume contains a preface by our mayor, Ho Yin Sing, with a translation of the same, which will be of interest. In the Chinese he makes more of the system, which he says anticipates exactly an idea of his own, than the translator has done.

Yours sincerely,

ANNETTA T. MILLS.

SCHOOL FOR THE DEAF,
CHEFOO, CHINA, Sept. 11, 1908.

NOTES AND COMMENTS.

POSSIBILITIES FOR THE SYMBOLS IN CHINA AND JAPAN.

What Mrs. Mills says in her letter, published on another page, of the possibilities of the symbols as a substitute for the cumbersome Chinese alphabet, is most significant. Practically the same word comes to us from Japan. There, too, is a gathering dissatisfaction with the ancient alphabet, and a movement is gaining strength slowly but inevitably leading to change. Now is the time for those who believe in the Melville Bell symbols to concentrate their forces to press its merits on the attention of the Chinese and Japanese authorities. The chances of the symbols entirely superceding for ordinary use the few and easily memorized Roman characters in European languages are remote. Another difficulty lies in the constitutional nature of our government, which renders a revolution in spelling by governmental order impossible. We all know what happened when President Roosevelt attempted to enforce reformed spelling.

In China and Japan conditions are very different. Their alphabet, instead of being formed of twenty-six characters, consists of many thousands. More than this, there are a number of alphabets in use. That employed for ordinary newspaper work contains nine thousand distinct characters, while that employed by the scholarly, highly cultivated classes has, it is said, twenty thousand. On an average it is estimated that it takes the first twelve years of a Japanese child's life just to memorize the different characters he must use if he is to be considered fairly well educated.

The need, therefore, of some simplification of the Chinese and Japanese spelling is infinitely greater and more pressing than our

own, and, proportionally, the chance of their adopting some simple form greater. As Mrs. Mills points out, our letters are not sufficient to express all the Chinese sounds, so that the difficulty of satisfactorily rendering Chinese sounds in our Roman characters is even greater than the difficulty we ourselves find in portraying all our own sounds by this means. Consequently, the adoption of our alphabet will not solve all the difficulties of the Chinese themselves in reading their own language, nor would it solve our own difficulties in learning it.

Since a change is to be made at all, it might surely be made to the very best, most scientific form, and this is the Melville Bell system of symbols.

The great difficulty again in the revolutionizing of our own spelling does not exist for the Chinese and Japanese, for their government is more or less autocratic and the people far less individualistic.

Some years ago when the bubonic plague invaded one quarter of Yokohoma, Japan, the people of that city woke up one morning to find this quarter surrounded by a high and stout rat-proof stockade. All the inhabitants of that quarter were removed from their houses and these were then burnt to the ground. No permission was asked, the government ordered it for the good of the whole people, and the order was carried out. No one thought of murmuring, outwardly at least. Of course, the plague was stamped out, and the result was worth what it cost in individual discomfort and loss. But imagine our central government undertaking such arbitrary, high-handed measures, no matter how necessary. It would be impossible. Here, then, lies the hope for the Chinese and Japanese in the matter of spelling reform. What the Japanese government has done before, it can do again. Should it decide that all Japanese spelling be done with Roman, or any other character, there is no doubt whatever that this order would be obeyed implicitly and absolutely.

Certainly here is something worth fighting for. Not to speak of the chances of permanent employment for those conversant with symbols, it is a cause worth the best energies of a man's whole life. What a grand thing it would be thus to revolutionize the spelling of great and ancient nations. How it would make for a closer intercourse and better understanding between the Occidental and Oriental nations, and the brotherhood of man. M. G.

CAPITALS AND PUNCTUATION MARKS.

Mrs. Mills writes: "I should like capitals and punctuation marks to be used" (in the symbols). This is a curious instance of the difficulty one has of disassociating one's self from the accepted and accustomed ways of doing things. The fact that English actually has two distinct and unlike forms, the written and spoken, is with great difficulty realized. Capitals and punctuation marks are among the distinctive features of the written form.

Now, the symbols aim to show to the eye the form which the ear takes in. We don't talk capitals. New York, for instance, sounds the same if written new york. Nor do we sound commas and periods; we simply pause for breath and we emphasize. So no capitals are shown in symbols and the pauses we aim to show by our spacing, which is of different lengths, corresponding to the natural pauses of speech. The emphasizing will be represented so soon as our present small stock of type warrants.

Once we have enough literature to accustom ourselves to the symbols, as to ordinary type, we will cease to miss the familiar signs.

M. G.

THE SYMBOLS IN JAPAN.

One of the firmest believers in the Melville Bell system of symbols for the purpose for which it was originally designed—to assist in the correct pronouncing of sounds in all languages by ordinary hearing persons—is a Japanese gentleman high in official position, Mr. Isawa. He has long advocated the adoption of the symbols by his government in place of Roman characters for reformed Japanese writing. He has already published Japanese books in which the symbols are used to a greater or less degree. While, therefore, we have no books corresponding to "German in Twelve Lessons," it might be possible that by applying to Mr. Isawa material would be obtained with which to master Japanese pronunciation. His address is, S. Isawa, 50 Dairokuten cho Koishikawa, Tokyo, Japan.

M. G.

THE DIAGRAM PUZZLES.

A letter of inquiry, sent to superintendents of schools, asking information upon the degree of success met with by teachers and pupils in reading the diagram puzzle, printed in our October issue, has brought responses showing evidence of wide-spread interest in the puzzle and its interpretation. There were many correct readings sent in, and others

incorrect only in a single word or element. Not a few letters, commenting upon the new feature of the department, expressed the hope that it would be made permanent—puzzles appearing regularly; and two or three asked that a series of standard diagrams be printed covering all the elements of English speech. This last, it may be said, is in contemplation, the work being, in fact, already under way. It is hoped to publish this series in an early issue of the REVIEW and also to furnish the diagrams on separate cards for use in the school room. We take this occasion to invite our readers to report upon their success in reading the diagram puzzle on another page of this issue, and from teachers we would like also a report upon the success of their pupils in reading it. F. W. B.

"Stories and Rhymes in Melville Bell Symbols," a sixteen page booklet, can be obtained by addressing the Volta Bureau. Price 25 cents per dozen copies. Also, blank speech diagrams, 60 on a sheet, at 60 cents per hundred sheets.

EDITORIAL COMMENT.

THE COLLEGE OF TEACHERS OF THE DEAF AND DUMB, LONDON.

We would call the special attention of our American readers to the article by Mr. Frank G. Barnes, under the above subject, printed elsewhere in this issue. If there is one weakness more notable than any other in our American system of deaf education, it is that we have no such examination and certification of teachers as has been provided for by our British cousins and as exists in one form or another in most, if not all, European countries. It would seem that the next great move forward in our work should be upon this line, to secure certification of teachers of deaf children—teachers doing the most difficult of educational work—by some constituted examining body with full authority to accept the qualified and to reject the unqualified candidates for positions in our schools. The work is a profession, in the ideal view of it, and it should be no easier for those unfitted or unprepared for it to enter it than to enter the profession of law or medicine or the Christian ministry. The profession—calling it that—is cheapened under present loose methods of admitting to its ranks, and, far worse than that, the work suffers sadly, in too large a part of it, at the hands of incompetents, whom an examining body, were it existing and acting, would easily have discovered and rejected.

In addition to Mr. Barnes' paper, we give, in the Institution Press Department, the complete list of questions asked by the Joint Examination Board at their last examination given, as we understand, in July, to candidates for certificate appearing before them. The questions in their character and scope give clear and abundant evidence of the high standard aimed at by the College, and the fact that nearly 400 teachers, as Mr. Barnes reports, in the past twenty-three years have successfully taken the examination and won certification, gives in itself evidence of the high average of professional culture and ability that must prevail in the present generation of British teachers.

It would be well if the profession, in its present-day leadership in our country, should take up this question of professional training and teacher certification and make a study of it in the

light of what is being done at this time in the way of its solution in Europe. It is certainly a question worth while, and consideration and some practical solution of it would tend more than anything else to standardize and unify the work of the country upon a high plane, not only of teacher capacity but of pupil attainment as well, for both go together. And why may not Great Britain's solution of it, be, in all its essential features, our own, and we have in time, in name and in fact, an American College of Teachers of the Deaf, whose certification will be prequisite to entrance by anyone upon the trust and responsibility of teaching deaf children to the full of their capacity for education? F. W. B.

A SUCCESSFUL PHOTOGRAPHER.

The last "Bulletin of the Aërial Experiment Association," of date November 16, publishes an admirable photograph of the late Lieutenant Thomas E. Selfridge, who lost his life by the fall of the Wright aëroplane at Fort Myer, and brings out the fact, in editorial reference to it, that the picture was taken by a deaf photographer, Mr. Frederic Haesler, of Philadelphia. We know Mr. Haesler personally, and know further that, though he is congenitally and totally deaf, he carries on his business through speech and speech-reading, and that he is moreover one of the most popular and successful photographers in Philadelphia. The Bulletin editorial follows:

"For the fine photograph of Lieutenant Selfridge which forms the frontispiece of this number we are indebted to Mr. Conrad Frederic Haeseler, a former pupil of the Pennsylvania Institution for the Deaf at Mt. Airy, Philadelphia. Mr. Haeseler was born deaf and educated exclusively by the oral method, having entered school on the first day that the oral class was begun. He was the first pupil to graduate, under the oral instruction, from that Institution, and the only one of the original class that finished the entire course of instruction. He was the first pupil sent to a hearing school from the Mt. Airy Institution, having been placed in the school of industrial art in Philadelphia, where he earned three scholarships in three successive years. This, with two additional years at the Pennsylvania Academy of Fine Arts, gave him fully six years of active art study. At the end of that time he became interested in photography, in which his father (Albert S. Haeseler) encouraged him, as being a more practical occupation for a deaf man. This has resulted in the establishment of a large photographic studio and a reputation enjoyed by no other Philadelphia photographer. Mr. Haeseler has certainly succeeded in producing the finest and most natural photograph of Lieutenant Selfridge we have seen."

A CORRECTION.

Our attention having been called by Mr. Wm. Wade, of Oakmont, Pa., to a definition of astigmatism, given in an article in the October REVIEW, which definition he considered erroneous, we referred the point, at his suggestion, to Dr. George M. Gould, of Ithaca, New York, a recognized authority upon the subject. Dr. Gould's reply to our letter follows:

DEAR MR. BOOTH: Thank you for sending me a copy of the ASSOCIATION REVIEW containing the article by Mr. Ermoloff. On page 386 of this article I find that Mr. Ermoloff, unintentionally of course, has made a mistake in his definition of astigmatism. Astigmatism is not, as he says, due to a difference in the seeing power of the two eyes, as such, but is due to the fact that the cornea of the eye is malcurved—that is, has a different radius of curvature in one meridian from that in the other. Mr. Wade, in the letter quoted in your letter, also makes another mistake equally bad in defining astigmatism as being due to the irregular shape of the lenses of the eye. Astigmatism is not, except in some rare cases outside of the rule, due to imperfection in the shape of the lenses, but to imperfection of the shape of the cornea.

GEO. M. GOULD.

THE DECEMBER MEETING OF THE BOARD.

The regular annual meeting of the Board of Directors of the Association will be held at the Volta Bureau, Washington, on December 17. Various matters of importance are to come up for consideration, including the future management and conduct of the Volta Bureau, recently transferred to the custody of the Association, and the fixing the date of and making arrangements for the Summer Meeting, with full programme, to be held the coming summer at Chicago.

F. W. B.

THE BEVERLY, MASS., SCHOOL RECEIVES A BEQUEST.

Information is received that the New England Industrial School, located at Beverly, Mass., has received a bequest of $50,000. This large addition to the resources of the school will greatly facilitate its work and enable it to enlarge its scope of usefulness. All connected with the school are to be congratulated upon its bright outlook, and we rejoice with them in this good fortune.

F. W. B.

DEPOSITING BOUND VOLUMES OF INSTITUTION PAPERS IN THE VOLTA BUREAU.

The Volta Bureau has recently received a bound volume of the last school year's numbers of the Deaf Carolinian, the paper published at the Morganton, N. C., school. It is a handsome book, full of valuable matter, and it is in every way fitting that it have permanent place in the library of the Bureau. This leads us to suggest, and even urge, that every Institution publishing a paper in the country make it the practice, upon the completion of a volume, to deposit a bound copy of it in the Volta Bureau for reference and preservation. The Bureau is fire-proof, and there could be no better or more fitting place to deposit such literature, insuring its preservation and usefulness for all the years and centuries to come.

F. W. B.

THE VOLTA BUREAU BECOMES THE CHARGE OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

As was foreshadowed in the June number of the REVIEW, the final act has been consummated in the passage of the proper legal papers, whereby the Volta Bureau property and funds are placed under the charge and control of the American Association to Promote the Teaching of Speech to the Deaf. Until now the Volta Bureau has had no corporate existence. It has been, strictly speaking, but the private property of its founder, Dr. Alexander Graham Bell, used by him as a channel for personal philanthropy in the work of "the increase and diffusion of knowledge relating to the deaf." Its affairs were administered as a trust, Mr. Charles J. Bell, President of the American Security and Trust Company, being the trustee. The property being personal and the trust being revokable at the will of the present or a future owner, it was necessary, with the view to insuring the permanency of the Volta Bureau and making perpetual its work, either to give to it independent incorporation or to transfer it to the control of a corporation already in existence. The decision was in favor of the latter course, and the American Association to Promote the Teaching of Speech to the Deaf, incorporated under the laws of the State of New York, has been given, under conditions imposed, ownership and direction of the Volta Bureau property and funds, such ownership and control to continue so long as the imposed conditions are fulfilled.

In order that the members of the Association may have full

knowledge and clear understanding of the action taken that places upon them henceforth the work and responsibility of management of the Volta Bureau, we give below a copy of the Agreement, formally drawn, signed, and sealed, whereby the property and funds are transferred and the imposed obligations are entered into:

AGREEMENT

Between Alexander Graham Bell and American Association to Promote the Teaching of Speech to the Deaf (Incorporated).

July 15, 1908.

Whereas, Alexander Graham Bell, on or about June 27, 1887, delivered to his father, Alexander Melville Bell, certain cash and securities for the purpose of founding and maintaining a Bureau for the Increase and Diffusion of Knowledge relating to the Deaf, which fund was, in turn, and with the consent of the said donor, transferred by Alexander Melville Bell to Charles J. Bell, who has since acted as Trustee of said fund, the same now consisting of real estate and personal securities as set forth on the schedule hereto attached marked "A," and made a part of this instrument.

And whereas, on May 4, 1897, said Alexander Graham Bell also transferred to said Charles J. Bell certain additional securities and money to be held by him as Trustee of the "Volta Bureau Fund," the income from which moneys and securities was to accumulate and be invested by said trustee from time to time and added to the principal fund last above described, and which now consists of real estate and securities as set forth upon the schedule hereto attached marked "B" and made a part of this instrument.

And whereas, the said Alexander Graham Bell, as original donor of each of said funds, has caused the work of the said "Volta Bureau," now located at 35th street and Volta Place, Washington, D. C., and for the purpose above stated, to-wit: the Increase and Diffusion of Knowledge relating to the Deaf, to be conducted and continued, but now desires such work continued under some corporate management in order that the benefits thereof may be more permanently assured, and to that end desires the said work taken over and so continued by and under the direction of the American Association to Promote the Teaching of Speech to the Deaf (incorporated), and in accordance with the terms and conditions hereinafter set forth.

Now, therefore, this agreement, made this 15th day of July, A. D. 1908, by and between the said Alexander Graham Bell, of the first part, and the said American Association to Promote the Teaching of Speech to the Deaf, a corporation created and now existing under the laws of the State of New York, or its duly organized successor in said work, of the second part,

Witnesseth, that for and in consideration of the premises, and the further sum of One Dollar, lawful money of the United States of

America, in hand paid by the party of the second part unto the party of the first part, the receipt whereof is hereby acknowledged, the party of the first part does hereby agree to cause the real and personal property in the aforesaid schedules "A" and "B," whereof copies are hereunto annexed, to be transferred by the said Charles J. Bell, the present trustee thereof as aforesaid, unto the American Security and Trust Company, a corporation, in the District of Columbia (the execution and exhibition of this Agreement being hereby made full authority to the said Charles J. Bell, the present trustee, to make such conveyance, assignment and transfer thereof to said American Security and Trust Company), subject to all the rights, duties and obligations herein provided for in respect of such Trustee, to be by said American Security and Trust Company, its successors and assigns, taken and held as a trust fund, and to continue to be known as and called the "Volta Bureau Fund," the principal whereof, and the increase therein, as hereinafter directed shall be by it, its successors and assigns, held in and upon the trusts following, and none other—that is, to take, have and hold the same with power for the purposes of investment or reinvestment, to sell and convey the said personal securities or exchange the same, or any part thereof, or to substitute for the same other good and valid securities of equal value whenever, in its discretion, it may deem it best so to do, and the proceeds of any sale or sales to invest and reinvest and keep invested, with no obligation on the part of any purchaser from the trustee to see to the application of the purchase money or to the proper performance of any trust on its part to be performed and the net annual income arising from or out of said fund, after payment of all taxes, insurance, repairs and other charges or expenses connected with the maintenance of the real estate known as said "Volta Bureau," to pay over, at convenient periods, to the party of the second part hereto, one-half of the remainder, not less, however, in any one year, than Two Thousand ($2,000.00) Dollars, and the balance of such net annual income to be invested as a part of the principal trust fund, and to permit the use and occupancy of the real estate and building known as the "Volta Bureau," as above described by the party of the second part hereto, as long as the party of the second part or its successor in incorporation and work shall well and faithfully keep and perform the duties, covenants and conditions by it to be so kept and performed and as hereinafter expressed; and when the present invested capital fund has been increased by Fifty Thousand ($50,000.00) Dollars or more, a sum not exceeding one-half of such increase of the capital fund may, in the judgment of the party of the second part, be applied by the trustee to the erection of such additional building or buildings as the Board of Directors of the party of the second part may determine and authorize, and such building or buildings and the ground occupied by the same shall become and remain part of said "Volta Bureau Fund" and subject, in all respects, to the conditions in this instrument expressed.

In consideration of the premises, and of the payments from the annual net income of the trust fund, as above provided, and the use

of the real estate and building known as the "Volta Bureau," as above described, party of the second part, for itself and its successor or successors therein, does hereby covenant, promise and agree to and with the party of the first part that it, and its successor or successors in such work, will continue to fully and faithfully carry out the objects set forth in the certificate of incorporation of said Association, viz: "To aid schools for the Deaf in their efforts to "teach speech and speech-reading by providing schools for the "training of articulation teachers; by the employment of an agent "or agents who shall, by the collection and publication of statistics "and papers relating to the subject, and by conference with teachers "and others, disseminate information concerning methods of teach-"ing speech and speech-reading and by using all such other means "as may be deemed expedient, to the end that no deaf child in "America shall be allowed to grow up 'deaf and dumb' or 'mute' "without earnest and persistent efforts having been made to teach "him to speak and read the lips," and in carrying on the work of the said Volta Bureau in the Increase and Diffusion of Knowledge relating to the Deaf, so far as said work may not be inconsistent with the objects hereinabove set forth.

And it is further agreed, by and between the parties hereto, that when the principal of the Trust Fund herein first provided shall reach the sum of One Million ($1,000,000.00) Dollars, no further addition to such principal fund shall be made from the annual income therefrom, but the net proceeds thereof, after deduction and payment of the sum or sums necessary to maintain in proper condition and repair the said Volta Bureau building or other real estate of said fund, and all taxes, insurance or other proper charge thereon shall be paid over to the party of the second part; and the party of the second part also agrees that in case it shall now or hereafter be found necessary so to do, to amend its existing articles of incorporation in lawful manner, in respect of the purposes of its organization, to include the work of the Increase and Diffusion of Knowledge relating to the Deaf, as above set forth;

And the party of the second part further covenants and agrees to and with the party of the first part that the title and custody of said "Volta Bureau Fund," in whatsoever it may consist, shall be and remain in and with the said American Security and Trust Company as such trustee, or such trustee as may be substituted for it, so long as said party of the second part or its lawful successor shall not fail to perform and keep the covenants and agreements on its part and by this instrument provided.

And it is further agreed, by and between the parties hereto, that the party of the second part shall have the right at any time, upon reasonable notice to the said Trustee Company, to discharge said company as trustee hereunder, and substitute in its place and stead some other well-known and established trust company, which shall assume all and singular the duties and functions required by the trust to be now conferred upon the said American Security and Trust Company hereunder.

And further, that upon the total failure, for the period of two consecutive years, of the party of the second part or its authorized successor, to carry out and perform the covenants and agreements on its part to be performed hereunder, then all and singular the trust funds in the hands of the said American Security and Trust Company, or its successor or successors in said trust, and in whatsoever it may consist, shall be by any such trustee of said fund at the time of the expiration of such period of two years, transferred and paid over unto the Smithsonian Institution, in which event the said fund shall be received discharged from any and all obligations of this trust, and the party of the second part for itself, its successors and assigns, does hereby expressly covenant and agree that any such transfer then so made by the then trustee of said fund shall not in any manner be open to challenge, objection or restraint by said party of the second part.

And further, that the transfer of the said real and personal property of said "Volta Bureau Fund" by the said Charles J. Bell, as present trustee thereof to the said American Security and Trust Company as such new and substituted trustee shall be and remain subject to all the terms, conditions, liabilities, rights and powers by this instrument provided, and this agreement shall be and become part of the instrument or instruments so conveying and transferring such trust fund as fully as if at length set out therein. And the said American Security and Trust Company shall, as compensation for its services, be entitled to retain out of the income from said fund as disbursed or paid over for any purpose a commission equal to three per centum thereon.

In testimony whereof, the party hereto of the first part has hereunto set his hand and affixed his seal this 15th day of July, A. D. 1908, and the party of the second part has caused its corporate name to be hereunto signed by its President and its corporate seal, attested by its Secretary, to be hereunto affixed this 4th day of September, A. D. 1908.

ALEXANDER GRAHAM BELL. (*Seal.*)

Witnesses to signature of Alexander Graham Bell:

MABEL G. BELL.
CHARLES R. COX.

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

(*Seal.*) By A. L. E. CROUTER, *President.*

Attest:
Z. F. WESTERVELT,
Secretary.

SCHEDULES "A" AND "B."

[Schedules "A" and "B" enumerate securities of the present market value of $63,197.60; together with unlisted bonds paying 4½ per cent interest to the amount of $9,000; and cash to the amount of $3,253.74.]

THE ASSOCIATION REVIEW is a publication of the American Association to Promote the Teaching of Speech to the Deaf. It is sent free to Active Members of the Association. Active membership is obtained upon payment to the Treasurer of the membership fee of two dollars ($2), or its equivalent in foreign currency—8s. 4d. in English money; 8m. 2pfg. in German money; 10fr. 2c. in French money; 7 kr. 50 ore. in Norwegian, Swedish, and Danish money; and 10l. 2c. in Italian money. Postal money orders should be drawn on Washington, D. C., in favor of F. W. Booth.

Teachers wishing positions and Superintendents wishing teachers may avail themselves of the office of the General Secretary of the American Association to Promote the Teaching of Speech to the Deaf, so far as it may be of service to them. The General Secretary aims to keep a list of teachers, and one of Superintendents, belonging to the above classes, ready for use by any person who may write for them.

Reprints in pamphlet form of "My List of Homophenous Words" (words that look alike on the lips), by Emma Snow, may be obtained through the office of the General Secretary. Price for single copies, 25 cents.

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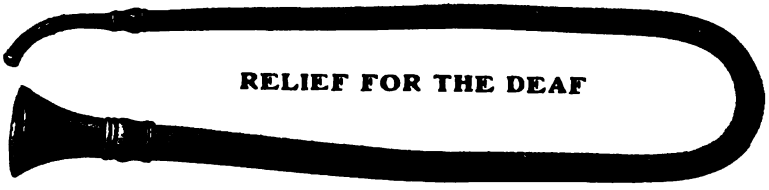

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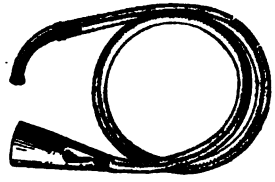

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